TRANSACTIONS

AMERICAN ACADEMY
of
OPHTHALMOLOGY
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NOVEMBER - DECEMBER
1956

Volume 60 Number 6

ANNUAL MEETING, OCTOBER 14-19, 1956, CHICAGO

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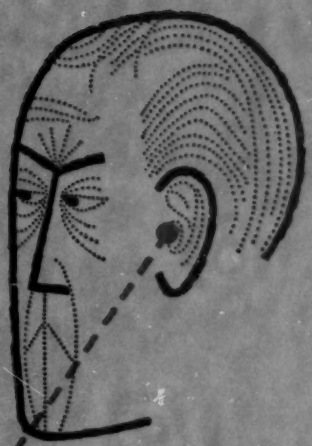

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American Academy of Ophthalmology and Otolaryngology

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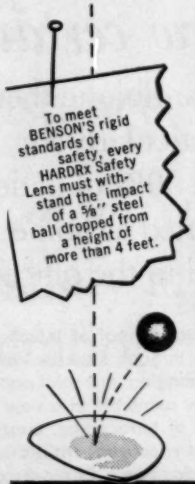
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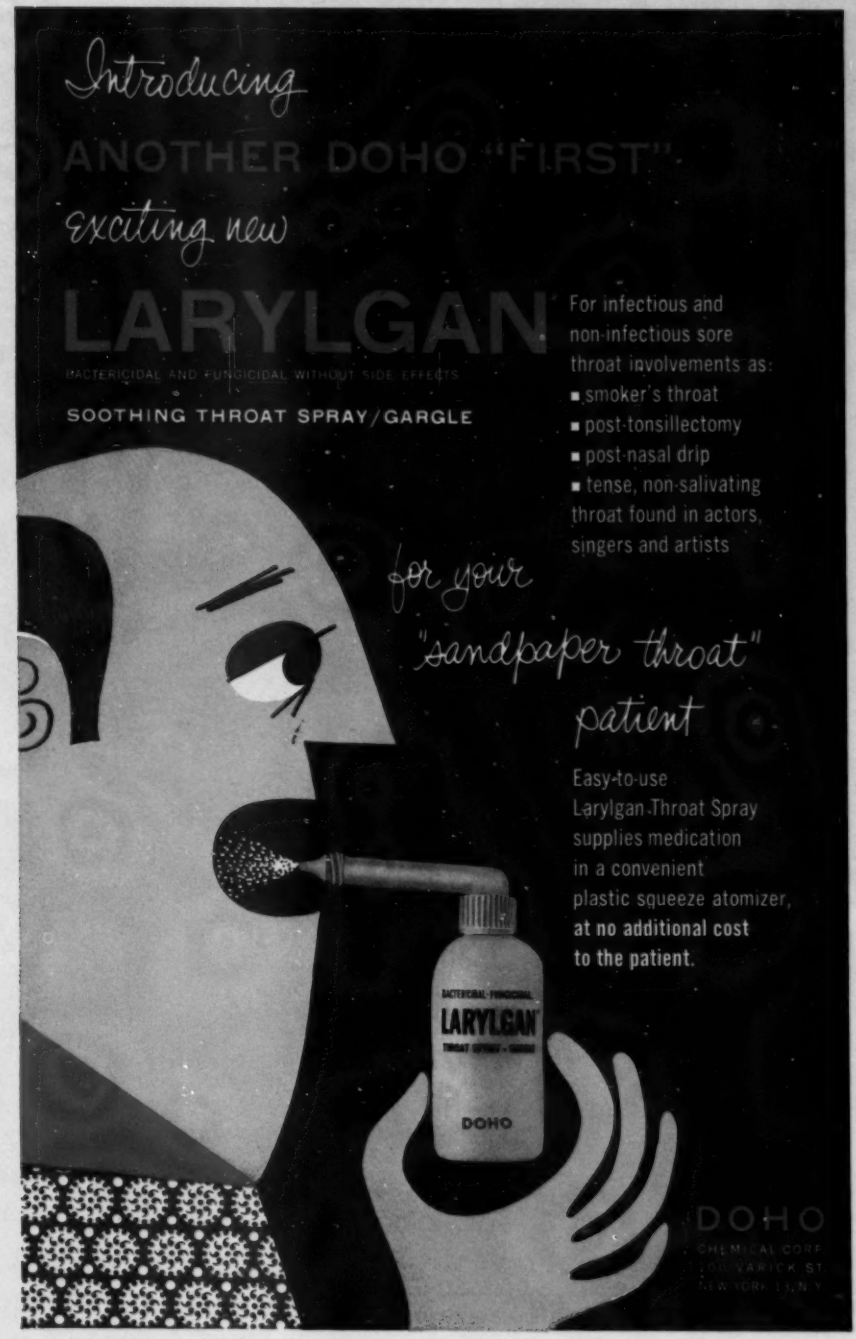
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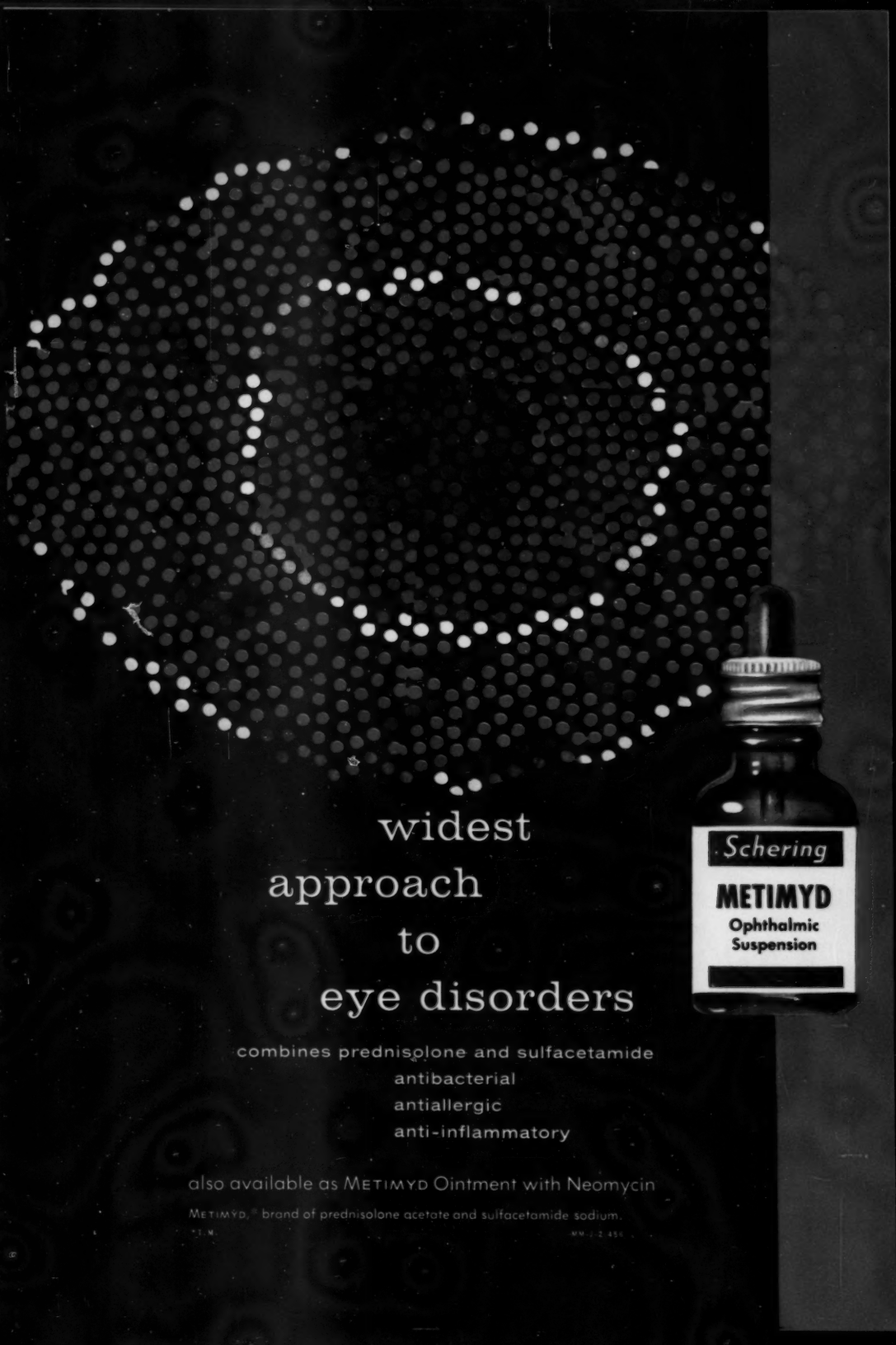

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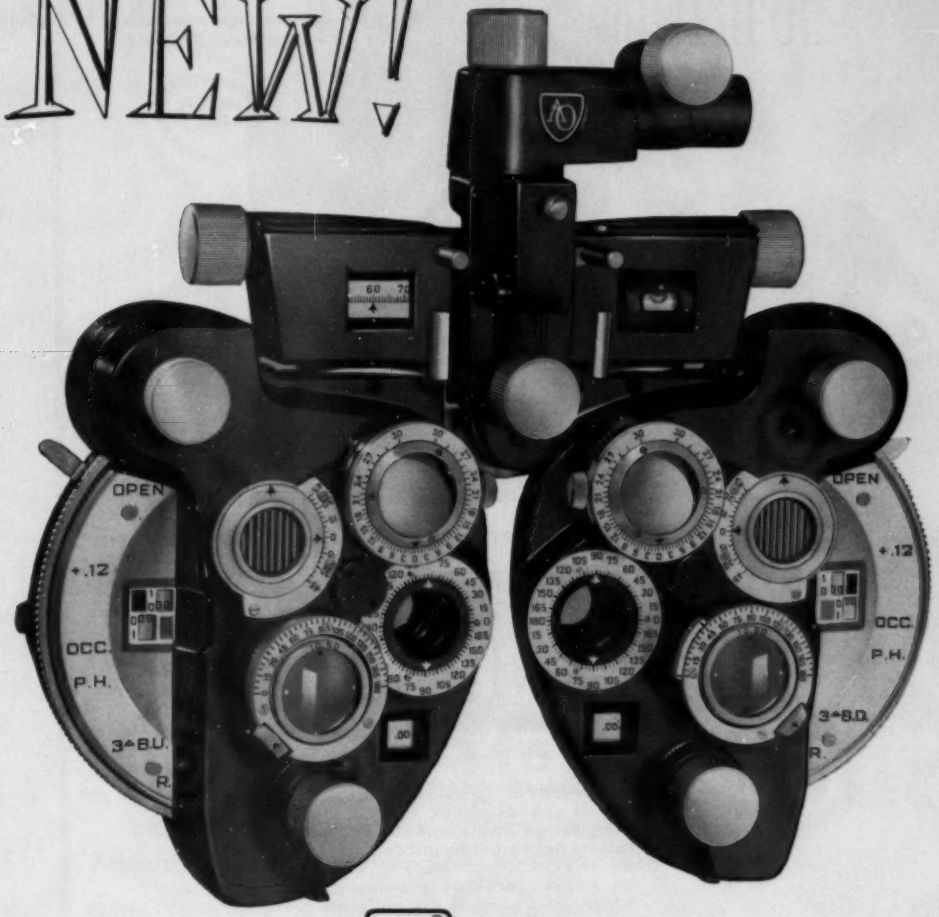

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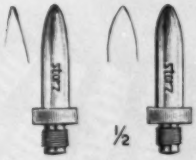

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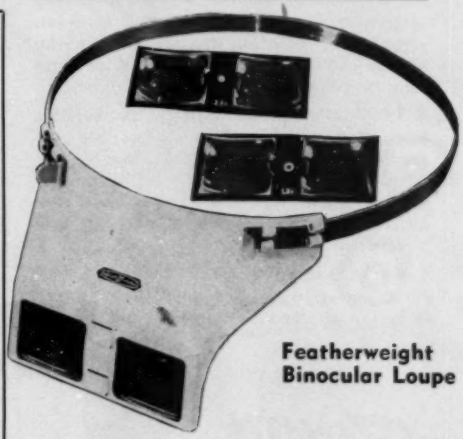

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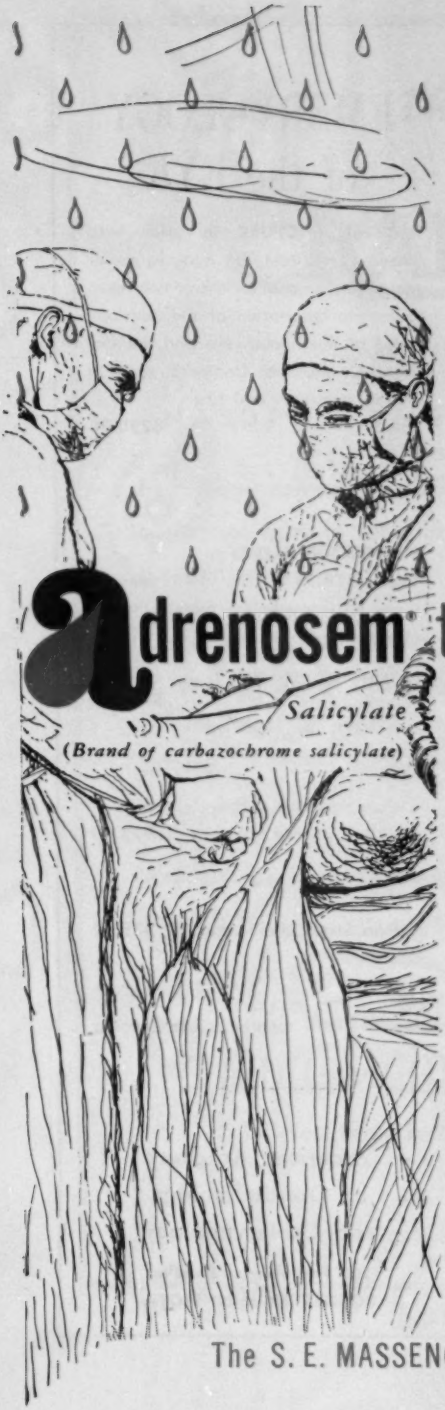

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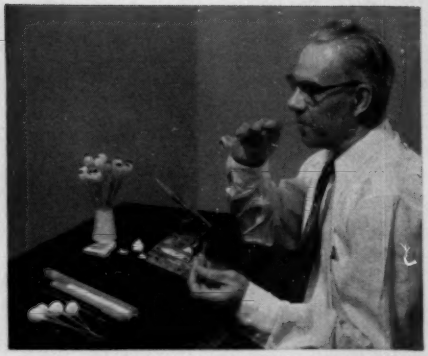

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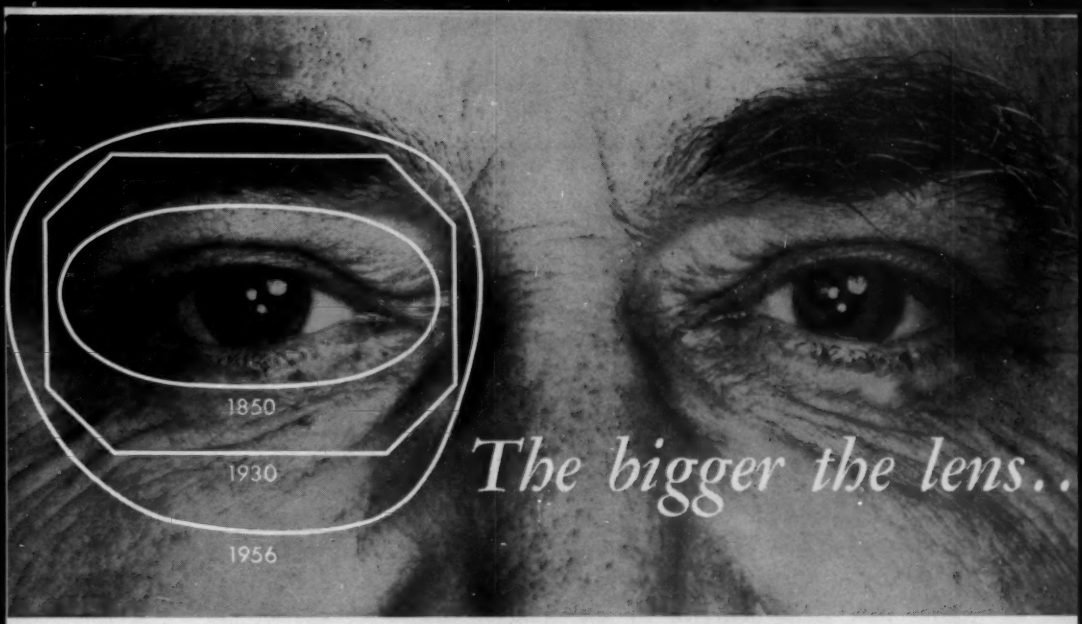
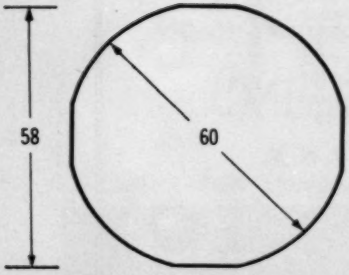


...the greater the need *for* ORTHOGON!

NOW...Orthogon correction in 95% of single vision prescriptions *without second-side surfacing!*



Now Orthogon uncuts are available in 58 × 60mm size. This means economy and quicker service. Even the most outsized modern shapes are supplied from Orthogon uncuts—with good glass left to spare.

Modern eyewear demands ever bigger lenses. And, of course, the only way to make them bigger is to add more glass at the margin. *How important it becomes that your patients get the benefit of Orthogon marginal correction!* To achieve the best possible end result of all your professional skill, insist on the highest order of quality in the lenses you prescribe. Insist on Orthogon—in *any* dresswear size.

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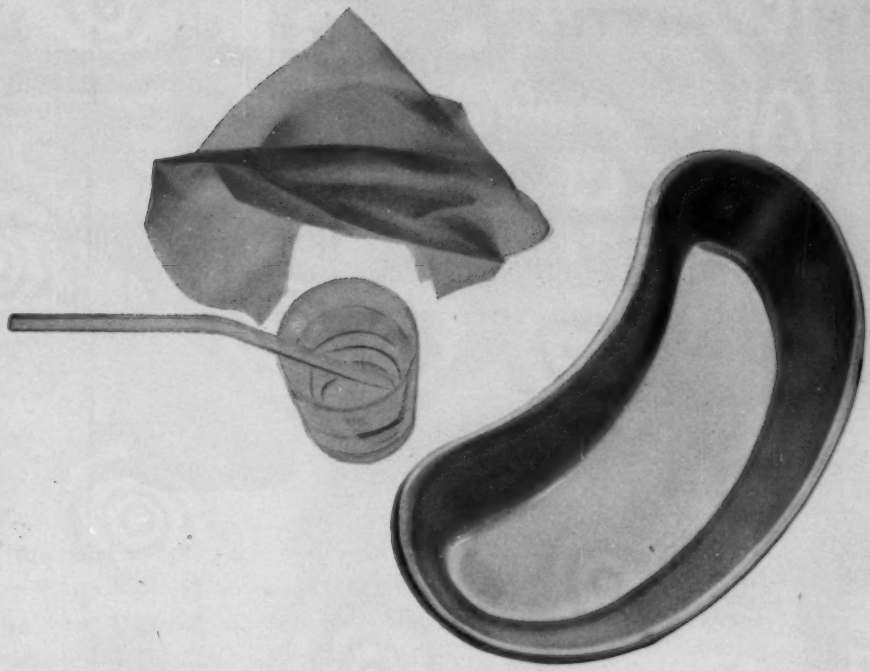

THORAZINE*

"markedly inhibits postoperative vomiting."[1]

With 'Thorazine' "postoperative retching seldom is a problem. Intractable nausea and retching due to spinal anesthetics responded . . . Retching caused by organ manipulation also responded."[1]

'Thorazine' administered before general anesthesia "reduced the postoperative vomiting from 28.8 per cent to 13 per cent."[2]

1. Mathews et al.: Am. Pract. & Dig. Treat. 6:360 (Mar.) 1955.
2. Albert and Coakley: Anesth. & Analg. 33:285 (July-Aug.) 1955.

'Thorazine' is available in ampuls, tablets and syrup, as the hydrochloride; and in suppositories, as the base.

'Thorazine' should be administered discriminately; and, before prescribing, the physician should be fully conversant with the available literature.

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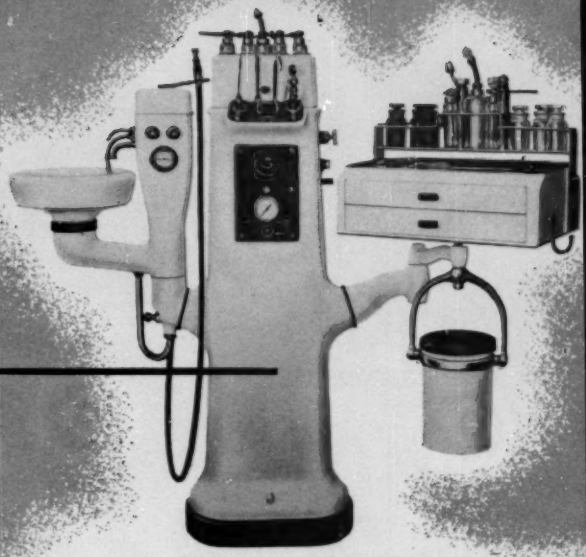
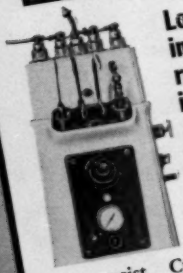
**T. M. Reg. U.S. Pat. Off. for chlorpromazine, S.K.F.*

ONLY RITTER OFFERS YOU A COMPLETE ENT UNIT



Medicament, special spray and suction bottles within easy reach

Swinging instrument table easily positioned where you want it with a touch of the fingers. Stainless steel tray holds sterilized instruments, plus any additional electrical instruments in readiness.



Low voltage instruments ready for instant use

Low voltage instruments positioned for easy grasp, are used without constant cord pull, yet are returned to the unit with a flick of the wrist. Current automatically turned off when instrument returned to holder.

Individual rheostats control cauteries and illuminated instruments. Auxiliary switch can control room lighting or Ritter Compressor. All controls and call button are within easy reach . . . pressure and vacuum gauge visible from operating position. Unit has extra plug-jack on side, for attaching head lamp or other low voltage instruments.

You have *everything* at your fingertips! . . . with a Ritter Ear, Nose and Throat Unit. With this unit equipment necessities for ENT work are carefully placed within your examining and treatment area . . . the cuspidor, conveniently located for patient use . . . the surgical aspirator with interchangeable tips right at hand . . . the low voltage instruments and spray bottles, centrally located for easy grasp . . . a swinging tray, holding medicaments and other instruments, effortlessly positioned to suit your needs.

The Ritter Ear, Nose and Throat unit was designed to help you utilize your skills to the fullest extent with a minimum of effort. You have your choice of four models—the cuspidor on the right or left side as an integral part of the unit, or a right or left-hand unit with the surgical cuspidor separate for placing on the opposite side of the chair.

WRITE for complete, detailed information on the Ritter ENT Unit, Ritter ENT Motor Chair, or Ritter Combination Ear, Nose and Throat-Oral Surgery Unit. Ritter Company Inc., 4824 Ritter Park, Rochester 3, New York.

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A COMPLETE TREATMENT ROOM IN A SMALL AREA

The dimensions in the above photograph are 5' 9" along one wall and 4' 2" along the other. In this area, conveniently arranged, is everything needed to make a complete examination. However, it need not be confined to this limited space. The complete absence of piping and wiring is especially noticeable. A number of other arrangements will be furnished on request.

Treatment Stand: Covered with stainless steel. Contains: air regulator with gauge, tubing, cutoff and air filter; nasopharyngoscope rheostat; push button; cautery transformer and rheostat; transilluminator complete with rheostat, cord, handle, lamps, antrum and frontal tips; seven metal drawers on fiber runners and one large drawer for towels; waste container; bakelite covered work table; space for six spray bottles, twelve solution bottles, shelf for cotton jars; pocket for history card or prescription blanks; and a spray bottle heater; the whole presents an attractive appearance and will not tarnish and is easy to keep clean. Price complete without glassware $195.00. Without air but with electrical equipment $165.00. With air equipment only $150.00. Without either air or electrical equipment $115.00. Glassware available.

Chair: Can be placed in horizontal position, will not tip in this position; raised and lowered by large hand wheel; paper covered headrest removable; locked with foot-pedal; bakelite armrests removable. Back locks rigidly in any position. As shown in brown or green. $150.00.

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Combined Suction and Cuspidor: This is an entirely new piece of equipment. It was designed to eliminate the cost of installing a separate suction. The apparatus is 12" wide and projects 13¼" from the wall. The flushing rim and the suction is furnished with a vacuum breaker and should meet all plumbing requirements. Stop and trap not furnished. Available in ivory, green and white. Price $95.00.

Ceiling Light: A telescopic light attached to the ceiling. May also be attached to base board in back of chair. Available in 4, 5, 6 and 7 ft. (extended). 4 ft. $16.50 (add one dollar per ft.).

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Stool: A soft upholstered stool with easy running ball bearing stem casters. $20.00. Stool with back, $26.00.

All the equipment shown in this advertisement, ready to be attached to your air system, $531.50.

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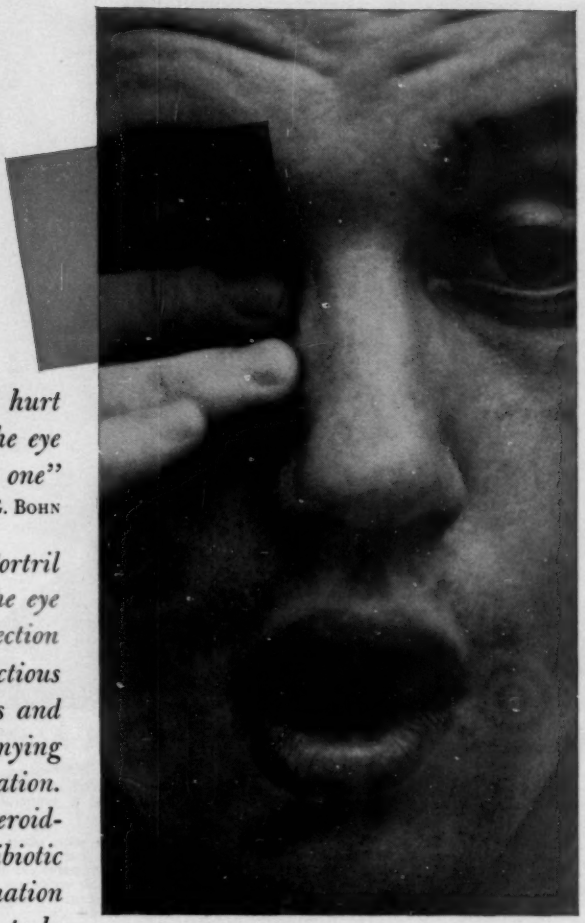

"a small hurt in the eye is a great one"
—H. G. BOHN

Terra-Cortril assures the eye maximum protection from infectious organisms and accompanying inflammation. The corticosteroid-antibiotic combination appears to be synergistic.[1]

supplied:
In amber bottles, with sterile eye dropper, containing 5 mg. oxytetracycline hydrochloride (TERRAMYCIN®) and 15 mg. hydrocortisone (CORTRIL®) per cc.

also available: CORTRIL Acetate Ophthalmic Ointment and CORTRIL Tablets.

1. Robinson, H. M., Jr., et al.: M. Times 83:227, 1955.

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brand of oxytetracycline and hydrocortisone

ophthalmic suspension

Pfizer

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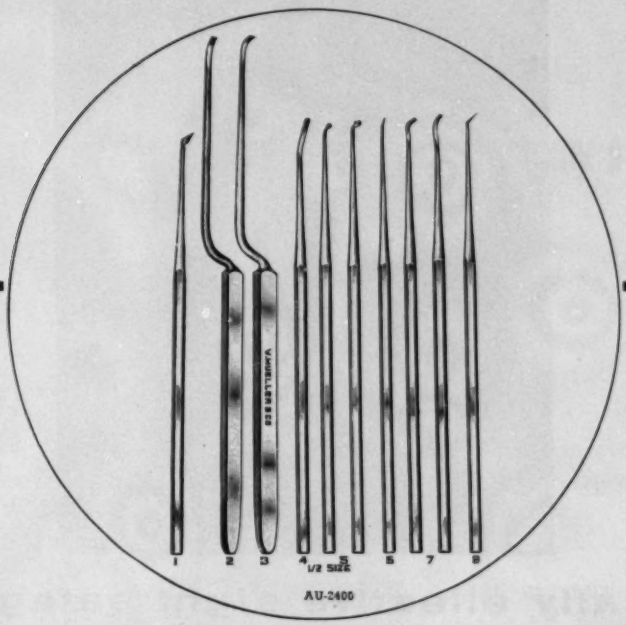

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For Stapes Mobilization

V. Mueller Catalog Number—AU-2400. 10 instruments in khaki roll.
Price—$44.00

1. Incision knife. For incision through skin over bony canal wall, about 6-7 mm. external to drum.
2. Bayonet Separator. (Lesser curve.)
3. Bayonet Separator. (Full curve.) Skin is separated from bone as far as drum, from beginning of incision.
4. Separator. (Slightly angled.) Drum is finally lifted out of sulcus, reflected upward upon itself like apron.
5. Separators. (Left, small; Right, large.) 2-3 mm. of very edge of incus is removed, making all necessary elements visible.
6. Probe. Finely pointed, for testing mobility of footplate of stapes.
7. Mobilizers. (Left, full curved, narrow; Right, lesser curved, narrow.) For applying variable pressure downward against neck of stapes.
8. Explorer. For use when necessary to sever adhesions involving ossicles.

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Topically administered hydrocortisone has proved to be "superior (to cortisone) in ...: contact dermatitis of the lids; vernal conjunctivitis; sclerosing keratitis; superficial punctate keratitis; recurrent corneal erosions, and diffuse episcleritis..." "Most other lid and anterior segment diseases responded equally well either to cortisone or hydrocortisone..."

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Reference: Hogan, M. J., Thygeson, P. and Kimuras, J., Arch. Ophth. 53:165, (Feb.) 1955.

MSD

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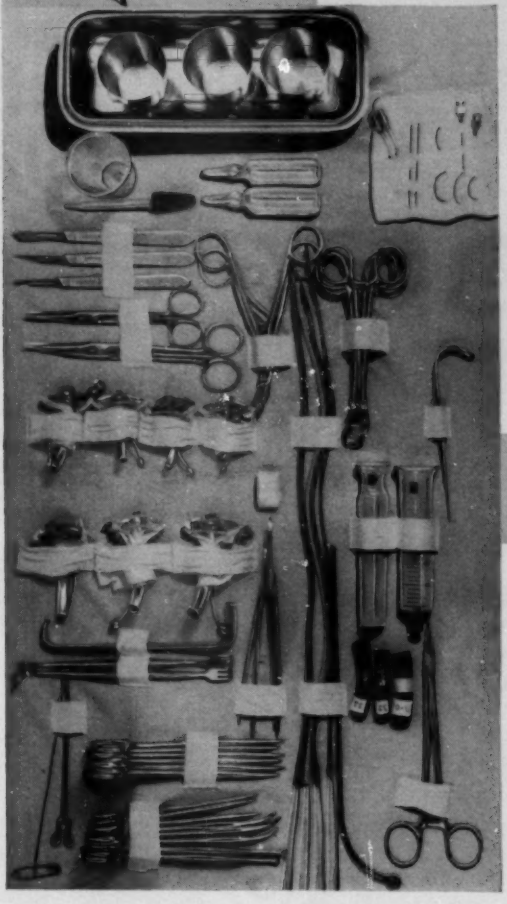
DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

This is the new emergency tracheotomy set

Designed by Walter H. Maloney, M.D. Philadelphia . . .



* complete in every detail for any emergency

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the hallmark of quality
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The Maloney Emergency Tracheotomy Set is available only from Pilling—

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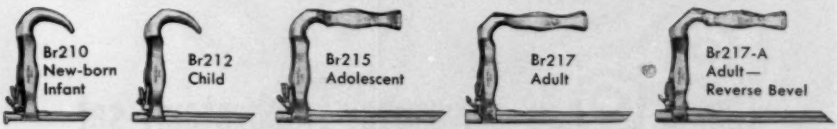
First name in instruments for bronchoesophagology—

The Anterior Commissure LARYNGOSCOPE FAMILY

(Twin-Lighted, Oxygen Bearing) *Designed for* | *Gabriel Tucker, M.D., Philadelphia*



Ease of manipulation, additional length, and even illumination are special features of Tucker Laryngoscopes, available in five sizes: for new-born infant, child, adolescent, adult, and adult with reverse bevel. Barrels are straight, smooth and round (except infant size) with extra length on the proximal end. Adult models are equipped with 4 standard size light carriers and lamps; smaller models are supplied with 4 extra-small light carriers and lamps. Each has twin lights with interposed oxygen insufflation tube used for suction when instrument is placed in the esophagus.

The Tucker Anterior Commissure Laryngoscopes are available only from Pilling . . . order direct . . . Br210—$63., Br212—$60., Br215—$60., Br217—$60., Br217-A—$63., f.o.b., Philadelphia

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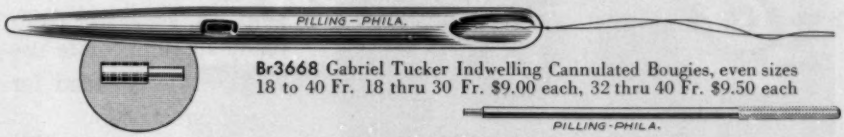
Tucker Cannulated Esophageal Bougies

For Corrosive Burns and Cicatricial Stenosis of the Esophagus

As an indwelling dilator, Br3668 is used in progressively larger sizes for treatment of corrosive burns, chronic cicatricial stenosis, and functional hiatal stenosis and cardiospasm.

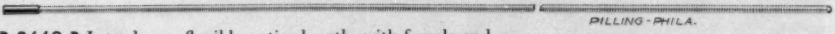
Tucker Bougies, permit saliva and fluids to pass from the mouth to the stomach when the bougie is in position, and eliminate much danger of injury to the larynx from pressure of an indwelling tube—when properly placed, only the tip of the bougie is in the hypopharynx.



Br3668 Gabriel Tucker Indwelling Cannulated Bougies, even sizes 18 to 40 Fr. 18 thru 30 Fr. $9.00 each, 32 thru 40 Fr. $9.50 each

Br3669 Introducer, with knurled, finger-grip handle distal 5″ flexible, with female end, 4½″ extension handle . . . . . $15.00 each

Br3669-A Cannulated Introducer, rubber tube 18 Fr., distal 5″ flexible, with female end, no handle . . . . . $16.50 each



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Br3669-C Bodkin, twisted wire for placing string through bougie and cannulated introducer . . . . . $1.50 each

Br3669-D Set consisting of Br3668, 18-40 Fr., Br3669, 3669-A, -B and -C . . . . $155.00 complete

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the hallmark of quality
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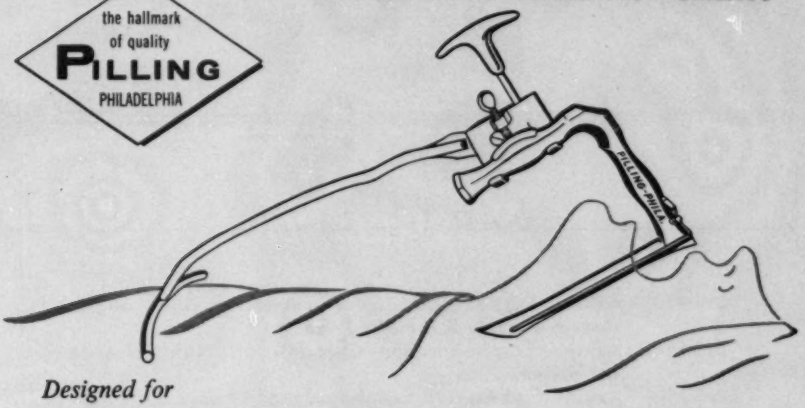


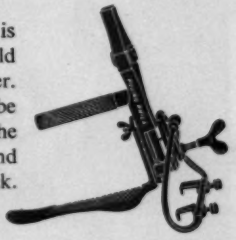
Designed for
ROBERT B. LEWY, M.D., Chicago

The Lewy Laryngoscope Holder is quickly and easily attached to any standard type Jackson or Holinger laryngoscope as well as a special adaption of the Lynch laryngoscope. Thus the Lewy Laryngoscope Holder permits relaxed laryngoscopy by converting a standard laryngoscope into a self-retaining unit.

The combination sprocket and worm gear maintains complete exposure of the vocal cord at all times. Even in the most difficult cases, the non-slipping gear power affords the laryngologist two free hands. He can now operate without the strain of manually holding the instrument and accomplish careful unhurried work. Furthermore, removal of neoplasms becomes more accurate and thoroughness of examination is thus improved.

In positioning the patient, under-the-shoulder support is sufficient. However, if desired, the patient's head may be held by an operating room assistant or a mechanical head holder.

A special adaptation of the Lynch laryngoscope may be used with the Lewy Laryngoscope Holder, eliminating the need for the Killian Gallows. One special long spatula and pair of tooth plates, as illustrated, are supplied. Finish is black.



Reference—R. B. Lewy: Acta Oto-Laryngologica, Vol. 46, Fasc. 1, 1956

Br248 LEWY LARYNGOSCOPE HOLDER	$69.50
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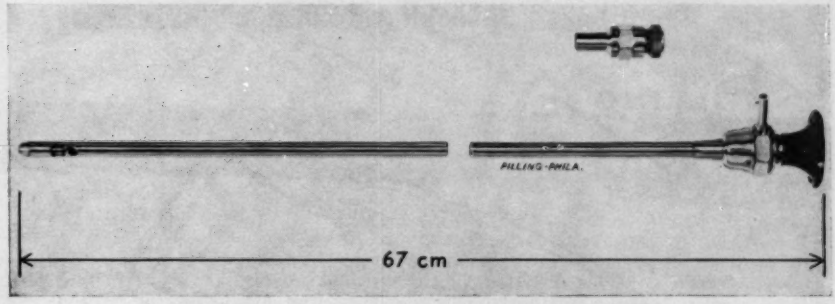
Atkins ESOPHAGOSCOPIC TELESCOPE

for examination of the cardiac end of the stomach and the distal esophagus
designed for JOSEPH P. ATKINS, M.D., Philadelphia



Br1413 Atkins Esophagoscopic Telescope — right angle, approximately 8 mm x 67 cm.
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Order direct from Pilling — or write for complete information.

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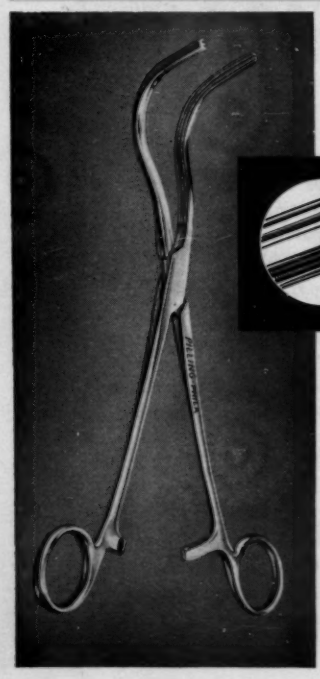
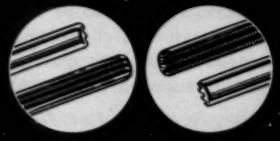


JESBERG
LARYNGECTOMY CLAMP
with *Atraugrip* Jaws*
Designed by Norman Jesberg, M. D., Los Angeles



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Atraugrip jaws offer a definite advantage in this new clamp to be used on the delicate hypopharyngeal tissue—they clamp securely with complete effectiveness; they do not slip, and will not crush or traumatize the tissue unduly.

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Cat. No. Br2646, 9½ inches long, curved, stainless steel.
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increasingly preferred

by physicians

strikingly effective

for patients

in allergic

and inflammatory

eye disorders

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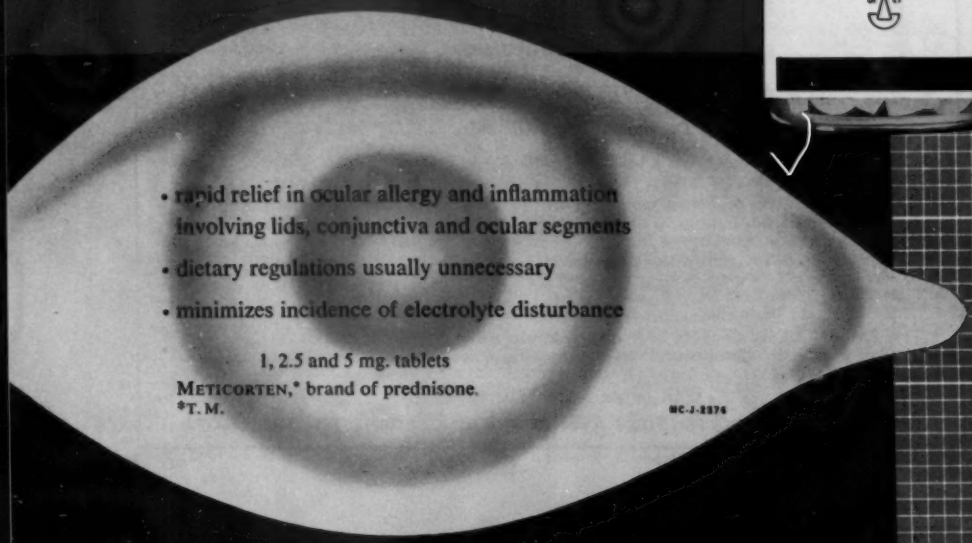
(PREDNISONE)



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- dietary regulations usually unnecessary
- minimizes incidence of electrolyte disturbance

1, 2.5 and 5 mg. tablets

METICORTEN,* brand of prednisone.
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Address of the President

A LOOK TO THE FUTURE

A. C. FURSTENBERG, M.D.
ANN ARBOR, MICHIGAN

No greater honor and privilege could be paid me as President of your Academy than the opportunity to speak to you on the subject "A Look to the Future." I am deeply sensible of this privilege, and the honor conferred upon me is attended by a keen desire on my part to be worthy of an event that justifies the best that can be said. I warn you, however, that I have only four speeches, the one I prepare carefully for delivery, the one I give, the one the press said I gave, and the one I wish I had given. However, in keeping with the philosophies and humanitarian service of the members of this great Academy, this would seem an appropriate time to pose some of the problems of medical education and of medical practice which appear vital and important to the future of our profession.

I feel certain that I am in the midst of a receptive audience. Many of you are teaching undergraduates or postgraduate medical students. A goodly number of this audience are the parents of medical students, young doctors, or prospective candidates for the study of medicine. All of you, I am sure, are interested in the purposes for which a medical school is maintained, namely, education, research, and the care of the sick.

We in the health sciences are in big business. People of this country are exceedingly health conscious and are vitally concerned with all of the personnel and the agencies dealing with the prevention and cure of illness. Dr. Allen Gregg believes that we are rapidly reaching par with food, clothing, and shelter. When we take into consideration the services of physicians, dentists, nurses, the medical schools and hospitals with their clerical and technical personnel, pharmaceutical institutions and instrument makers, national societies and foundations concerned with health, governmental agencies, health, accident and insurance companies, we might well be listed on the stock exchange among the top four or five great enterprises of this country. Moreover, we would enjoy unprecedented trading activities because of the public's interest in health and their awareness of the effectiveness of all these persons and agencies concerned with it.

Rapid advances in medicine and the tremendous growth of the health sciences have created an environment in which man's basic existence is reasonably assured for sixty-five years or longer in this part of the world. The old vital statistics which doomed man to death before he was forty have been shattered. We, in a very large measure, are the custodians of this environment. It is within our power to protect and defend its ideals and to fulfill its obligations or to permit it to pass into a period of decadence, menancing to health and longevity.

Presented at the Sixty-First Annual Session of the American Academy of Ophthalmology and Otolaryngology, Oct. 14-19, 1956, Chicago.

But the custodianship of any great enterprise entails obligations and important responsibilities. These must be a major concern of every medical man in a free world. If we are interested in progress, are inspired by our concern for our rapidly increasing population, and have confidence in the miracle of prolonging life and of maintaining it useful and effective, we shall proceed resolutely to meet the challenges which are now before us.

We come face to face daily with that all-important controversial issue which deals with the number of physicians in this country. Statistics for various purposes and design are presented to us in great abundance by many persons with ethical differences of opinion. One individual, for example, tells us that we have one doctor for every 850 persons in this country; thus we are adequately supplied with medical service. Another informs us that while these ratios may be true now, we are nevertheless facing a period of decadence because of our failure to reckon with anticipated normal mortality losses and attrition of medical men for disability and retirement reasons. I question the validity of all these figures. Frankly, they have me confused. They have succeeded in doing what Stephen Leacock said could be accomplished by any academician addicted to numeration. "If, when delivering a statistical speech," said Leacock, "you observe that some member of your audience is awake and appears to have a gleam of intelligence on his face, throw in a fraction or two and you will promptly put him to sleep." This is precisely what has happened to many of us. Speakers on the subject have thrown too many fractions at us. Yet, I suppose Will Rogers was right when he said, "Statistics are like garbage, when you got 'em you gotta do somethin' with 'em."

A number of influences exist today which call for an increased number of physicians in this country. Our rapidly increasing population and their needs for more effective medical care and preventive services are demanding a greater number of doctors. Are we making provision for the health care of our population in 1960? The answer is obviously no. In planning new medical schools, it must be realized that approximately seven to eight years will be required in designing and constructing a building and in educating through the intern year the first class of students. Therefore, a program initiated now would not help to meet the health needs of the people of the United States in 1960, when it is reasonable to expect that our population will show an increase of 18 per cent in the past decade. The U. S. Bureau of the Census predicts a phenomenal growth of our population in the years ahead of us. Dr. Dudley Kirk, Demographic Director, The Population Council, Inc., states that "within the living memory of many Americans, the United States had a population of only 75 million." By the time of our last census in 1950, this figure had doubled. By 1980, it may be tripled. He believes that "a reasonable guess of our population in 1980 is 240 million on the assumption of the continuation of present trends in birth and death."

Our growing old-age group requires more medical care. Preventive medicine and modern medical service are potent factors calling for increased medical talent. The Armed Services, the Veterans Administration, public health programs, industrial and school health fields are in great need today for a greater number of doctors. There certainly is no oversupply of doctors in academic medicine, and vigorous efforts are being made today to enlist the services of more physicians in this discipline.

It is of interest to recall that after World War I, the medical schools of this country were deluged by applicants for the study of medicine. The same situation prevailed after World War II. In the years 1947 to 1950, three times as many qualified students as could be accommodated pled for an opportunity to study medicine; whereas since this period, and notably in 1953 and 1954, some of the 81 medical schools of this country had difficulty in enrolling full entering classes of students with high scholastic attainment. For reasons not easily explained, we observed a definite decrease in the number of well-qualified students seeking admission to the study of medicine during this time.

But one can predict with strong conviction that this situation is of short duration. A note of warning must be sounded to those institutions which are content with the status quo and serenely satisfied with the funds and facilities now at their disposal. If one estimates the number of students in elementary schools today between the ages of 7 and 11, and is willing to accept the premise that the young people of the future will be as interested in higher education as those of the past, our colleges and universities must anticipate an increase in enrollment of 50 per cent to 75 per cent by 1965. The percentages are even higher when one considers the probability of an ever-increasing demand for the baccalaureate and professional degrees in the years to come.

To cite an example, I might say that there are enrolled in the University of Michigan this year approximately 22,300 students. The administrative officers of the University are giving serious consideration to plans for the admission of some 40,000 students in 1965. When and if this occurs, the impact of this clamor for higher education is certain to be felt by our schools and colleges of medicine. Privately endowed and State-supported schools alike will not be immune to the pressure of alumni and legislators, and the demands of public opinion. When the time comes that many more well-qualified young men and women knock on the doors of the medical schools than can be accommodated, these pressures quite properly become a potent influence on the administrative and fiscal policies of any institution. And this is all the more aggravated by the fact that there will be a need for more physicians in the years to come.

I am particularly sympathetic toward the young boy or girl in the second decade of life who is pointing toward a career in medicine. We often see an intense motivation at this age, and it usually denotes an indomitable spirit and will to be a doctor. Initiative and determination of this character should be encouraged and nurtured vigorously and sympathetically by those of us who have not been traumatized by a sacrifice of our ideals and objectives at a comparable age. Yet we must admit that these young people are at a distinct disadvantage today in terms of available facilities for the study of medicine, and this disadvantage is certain to increase unless a plan for expansion is promptly instituted.

We have two courses to pursue: one, to construct and staff new medical schools, and the other, to increase our present enrollments in the medical schools of this country. I believe that there are valid arguments for doing both, and if these are done in a judicious and orderly manner, we need have no apprehension about fulfilling public demands for medical care and at the same time maintaining high standards of medical education. When human lives are at stake there can be no compromise with that fundamental principle of the highest possible quality of medical service

But the custodianship of any great enterprise entails obligations and important responsibilities. These must be a major concern of every medical man in a free world. If we are interested in progress, are inspired by our concern for our rapidly increasing population, and have confidence in the miracle of prolonging life and of maintaining it useful and effective, we shall proceed resolutely to meet the challenges which are now before us.

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for all groups of our population. We must give quality in medical education our first consideration as we proceed with a program of expansion.

Medicine is taught and fought on three fronts today: in the classroom, in the laboratory, and at the bedside. There is no sharp line of demarcation between medical education, research, and the care of the sick. Each is inexorably dependent on the other.

In the office of the Dean, one soon discovers not only that an administrator has three jobs but that these three responsibilities share a common reality, a reality usually and rightfully conceived by the layman to be typical of medicine itself. This is the reality of emergency, of unpredictability, of change.

We need to examine the force of this reality in our medical school each year when our budgetary requirements are anticipated. Medical education is enormously expensive. It is estimated that it costs some $14,000 to $15,000 to educate a single medical student. Some institutions contemplate an even greater outlay. Our medical schools budget to the very last dollar. This, of course, is imperative. Educational institutions must respect the fiscal year. It often happens, however, that the fiscal year fails to respect the unpredictable nature of sickness and health. It is a great source of satisfaction, to say nothing of the feeling of security which is engendered, to know that contingency funds are now provided by our American Medical Education Foundation and the National Fund for Medical Education for emergency needs. I should like to take this opportunity to thank the members of this Academy most sincerely for their generous contributions to these agencies, which in turn have given the medical schools inestimable aid during the past four years in providing some of their unpredictable needs.

We must of necessity emphasize the needs of undergraduate education. We are well aware, however, that continuing education after commencement is a professional requirement which must be fulfilled if we want our doctors to be more than journeymen, artisans, and symptom treaters. Every medical student realizes that he must pursue postgraduate courses for the remainder of his life if he is to maintain a reputable position in the practice of medicine. Within but a brief period in this age of rapid advances in medicine, a man's medical knowledge may become obsolete. The public rightfully demands highly technical skills and specialized capabilities, which can be furnished only by medical men who are assisted by our medical schools throughout their lifetime of useful service.

While our medical profession has made rapid advances in education and research and contributed significantly to the health of this country, we must lay aside our soothing preoccupation with past victories and become alerted to a peril which could result in a national disaster. Most of our medical schools have come face to face with serious financial problems. The seriousness of this situation cannot be exaggerated, particularly as regards the notoriously insufficient incomes of many of our affiliated hospitals. Threatening financial deficits are making it exceedingly difficult for many of our medical schools to maintain satisfactory teaching standards. Competent teachers for the basic sciences are at a premium. There is a great demand today for the services of anatomists, biochemists, physiologists, pharmacologists, and pathologists in our institutions of higher learning. Many of our highly qualified academicians have been lured away to positions in industry which offer salaries two to three times greater than those provided by the medical school budget.

The doctor of today is interested in his livelihood, in making a satisfactory living for himself and family. I am unable to reconcile to modern medical practice the timeworn tradition that the doctor enjoys starving in his attic. Those sensitive souls who talk about one's love of science for science's sake and believe that those engaged in scientific pursuits do not claim a utilitarian value for what they accomplish have never had the administrative experience of a Dean. The great men of medicine who have created epochs in the progress of science did not starve in laboratories —at least the court proceedings of their probated estates do not reveal many instances of such a tragic ending.

While a small percentage of practitioners of medicine in this country have been generous in their contributions to the American Medical Education Foundation, there has been no evidence of mass enthusiasm on a united front to support the medical schools which gave them their professional education. If all the practitioners of this country who accepted the generosity of State-supported and privately endowed medical schools, which made their professional future possible, would give $100 a year to their respective medical schools, they would make $18,000,000 available annually, a sum which is nearly twice the amount required to pull the medical schools of this country out of the red. To the average general practitioner who in 1954 grossed $15,800, this would represent 63/100 of 1 per cent of his income for the year, and this is deductible.

To go a step further at the risk of appearing visionary, I should like to cite an example. If all the members of this Academy would pay to our treasurer the sum of $100 annually for medical education, we would raise more than $600,000. The Academy, in turn, could transfer the total sum to the American Medical Education Foundation, earmarked for the departments of Ophthalmology and Otolaryngology in those institutions in need and with the spirit and will to give their departments of Ophthalmology and Otolaryngology a position of respect and dignity in the curriculums of our medical schools. You and I would thus derive the satisfaction of repaying, in some measure, the medical schools which made our careers possible. Equally important, we would give our specialties to which we are dedicated a forward thrust and a sense of direction at a time when our initiative needs abundant vigor, vision and vitality.

The most important problems facing American medicine today appear obvious to anyone in the practice of medicine. They embrace four areas: (1) preventive medicine, (2) mental health, (3) chronic illness, and (4) rehabilitation. The Conference on Preventive Medicine in Medical Schools, held in November 1952 in Colorado Springs, clearly defined the concepts of prevention and the challenges to the medical profession in carrying them out. They are quoted as follows:

> Measures for health promotion, whether in the form of improved housing for a particular group of people or in the form of advice given to an individual mother in the care of her newborn child are measures to fortify health, rather than to combat any particular disease or disorder.
>
> On the other hand, specific protection represents prevention in its strictest sense. Here measures are taken against a particular disease or group of diseases to intercept their causes before they involve man. Some of these measures may be applied to the environment, such as when a shield is put over the moving parts of a machine in a factory or a sewage disposal plant installed in a town. Others, may be applied directly to man himself, such as by immunization procedures.
>
> Early recognition and prompt treatment are the best preventive measures for disease where there is yet no known specific protec-

tion as in cancer. They are also needed when for one reason or another specific preventive measures were not applied, as in dental caries.

Similarly when there is failure of prevention at an earlier phase in the natural history of the disease, preventive measures may still be applied to limit disability. Here treatment of the diseased process even when it is firmly established may still prevent its continued course and avert defect or disability and postpone death.

Obviously these concepts of prevention call for the fullest cooperation of public health, medicine, the nurse, the social worker, and all community facilities for diagnosis and treatment, in short, comprehensive medical care. The medical profession has not yet accepted comprehensive medical care, but it is a challenge which we respect and which, I believe, will be met by the adoption of programs available to all groups in our population.

There is a real awareness of the gravity of mental illness today. Judging from what we hear and read, it is the major problem of the day. It is encouraging to note that we are emerging from the contamination of psychic phenomena and soul-searching consultations and are beginning to recognize the possible biological factors in the production of mental illness. Thanks to a number of scientists in this field, this new approach has been adopted with a precision of action.

The young doctor must realize that much of the practice which he hopefully anticipates will consist of patients who are experiencing some social, economic, moral, or religious conflict, that their physical ills are a reflection of some emotional state, and that drugs and operations will not cure them. In many of our large clinics, the opportunity is given our residents in otolaryngology to associate closely with those in the neuropsychiatric fields. If they are looking for a full measure of preparation for the practice of otolaryngology, they will grasp the chance to learn something about the mental and physical reactions to the emotional influences of life and will develop an appreciation of the variable human capacities for enduring pain and sorrow, and resisting adversity and despair. A recognition and understanding of these important factors of otolaryngologic practice will warn of the dangers of iatrogenic medicine, a practice, too often carelessly or unwittingly employed, of doing the patient harm by saying too much or, by the same token, by saying too little.

Chronic illness and rehabilitation go hand in hand. Some time ago the government established a commission on chronic illness. Its members have been busily at work in certain quarters, with the result that they have come forth with some startling discoveries and significant facts. In a spot survey of the inhabitants of Baltimore, Maryland, their preliminary report indicates the incidence of 507 chronic conditions for each 1000 persons. In persons aged 65 or over, chronic conditions were discovered two and a half times more frequently than in persons under 65. Much encouragement is found in the observation that a large proportion of the conditions listed in this report could have been prevented, are still reversible, or are capable of being brought under control. A preliminary report on a similar study in Hunterton County in New Jersey, which has not yet been published, indicates that there will be close correlation with the findings in Baltimore.

Since rehabilitation is closely allied to prevention, the Colorado Springs conference on preventive medicine gave recognition to a new specialty, "rehabilitation." I quote from the conference report:

Rehabilitation is the final weapon. Although disease has to a greater or lesser extent handicapped individuals after it has become rela-

tively stabilized, there are still opportunities to make use of remaining capacities. Even though changes in form and function are no longer reversible, measures may still be taken both to help the individual and to modify his environment so that he can also return to a useful member of society.

As we look to the future, think of the important part to be played by the otolaryngologist in the solution of these challenging problems. Nearly everything we do supports the programs of prevention and rehabilitation. It remains for us, however, to exercise our influence in furthering the concept of comprehensive medical care. Many of you have already accepted this program in part by your application to group practice. It is hoped that we are now on the road to a bold, vigorous, and intelligent program of action which will solve these problems of medicine for all groups of our population, economic as well as geographic.

One note of discouragement, however. It can't be done on a four-day work week.

NEW CONTRIBUTIONS OF RADIOLOGY TO OPHTHALMOLOGY AND OTOLARYNGOLOGY THROUGH VASCULAR VISUALIZATION

MELVIN M. FIGLEY, M.D.
ANN ARBOR, MICHIGAN
BY INVITATION

IT is a great pleasure to accept the invitation of your President to address you this morning, although at first glance it may appear anomalous that a radiologist should do so. That I should be here is not inconsistent, however, considering Dr. Furstenberg's acute awareness of recent developments in many fields of medicine, some far removed from his own clinical activity; a quality, among many others, that has enabled him to guide so successfully the destinies of the University of Michigan Medical School. And it is a pleasure to acknowledge publicly the gratitude we in the radiology department have for his keen interest and great assistance in implementing further studies in that aspect of radiology about which I shall speak.

Dr. Furstenberg thought you might like to hear a brief account of some of the recent progress in cardiovascular radiology, for it has been in this branch of radiological diagnosis that truly exciting developments have occurred—in fact, a whole new approach to the study of pathologic anatomy and physiology has been provided. Formerly, radiologic examination of the cardiovascular system was confined to simple observations concerning external contours, surface movements, and calcification in the heart and vessels; as such, it had limited diagnostic potential. Now, through various specialized methods to create temporary radiopacity, the interior of the heart, the entire arterial tree, the bulk of the peripheral and portal venous systems, some peripheral lymphatics, and (through their vascular channels) the parenchymas of several organs have become accessible for detailed examination. In effect, a new dimension has been added to radiology, namely, the vascular lumen.

The angiographic methods have already added greatly to our knowledge of normal and pathologic anatomy and physiology and have clarified the limitations and potentialities of simpler roentgen methods. The advantages they provide have been realized and made use of by many branches of medicine, but most of all by the surgical specialties, for the information provided often has important and direct bearing on surgical treatment. Although in any one specialty the application of these techniques may be appropriately infrequent, all told, we encounter a wide variety of diseases in which the elementary vascular defects are demonstrable by these methods; namely, occlusion of the lumen, enlargement of the lumen, and abnormal connections, branches or position.

It is not my intent to go into great detail about these various techniques, nor to show their most frequent applications, for most of these are quite remote from ophthalmology and otolaryngology, but I have chosen to show a few diseases whose initial symptoms may bring the patient to you or require your expert

From the Department of Radiology, University of Michigan, Ann Arbor.

Presented at the Sixty-First Annual Session of the American Academy of Ophthalmology and Otolaryngology, Oct. 14-19, 1956, Chicago.

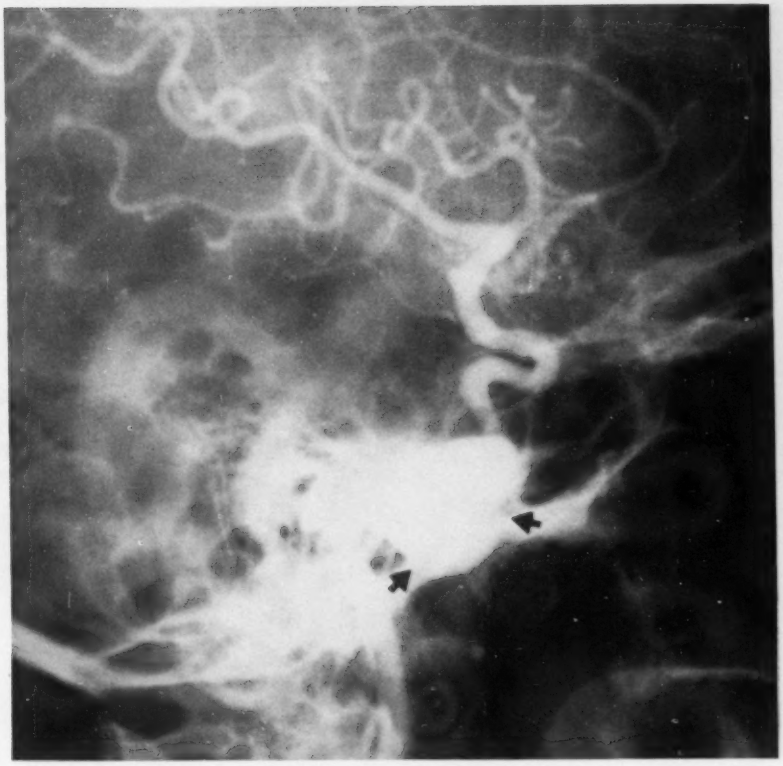

FIG. 1—Male, 32 years old, shown by arteriography of the right carotid to have a large aneurysm of the internal carotid artery in the carotid canal (arrows).

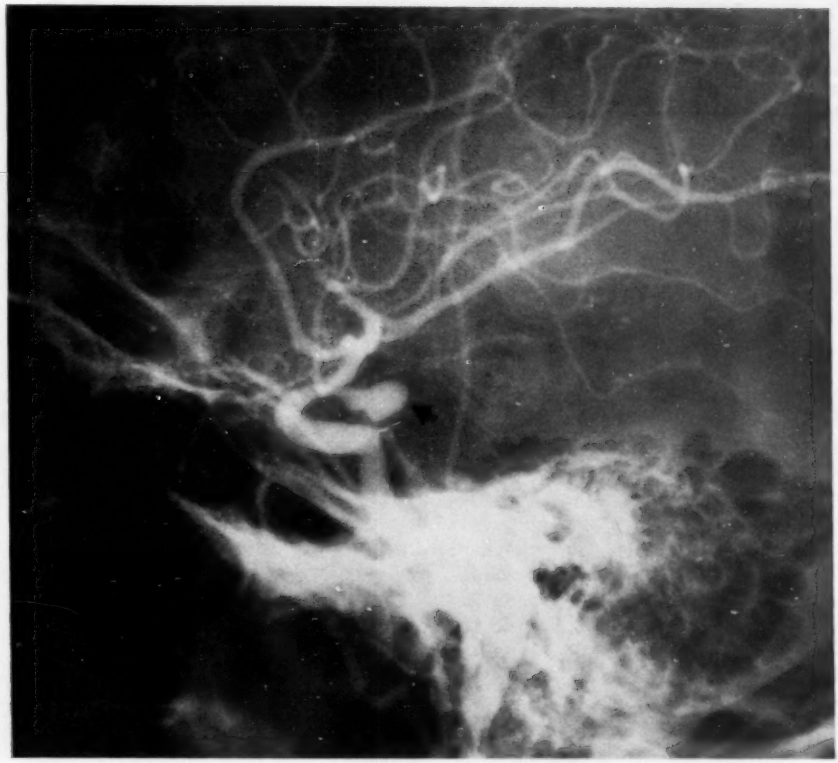

FIG. 2—Arteriogram of the left carotid in a 28-year-old woman demonstrates a saccular aneurysm arising from the supraclinoid portion of the internal carotid artery (arrow).

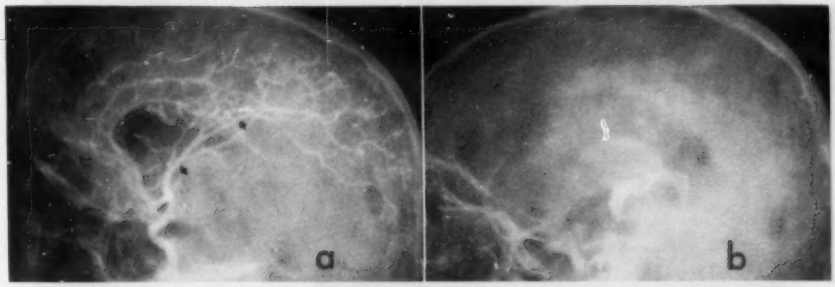

FIG. 3—Boy, 13 years old, with a brain abscess. (a) Left carotid arteriogram following indecisive ventriculography shows upward displacement of the middle cerebral artery (arrows), indicating a mass in the temporal lobe. (b) Abscess cavity visualized by injection of thorotrast following aspiration.

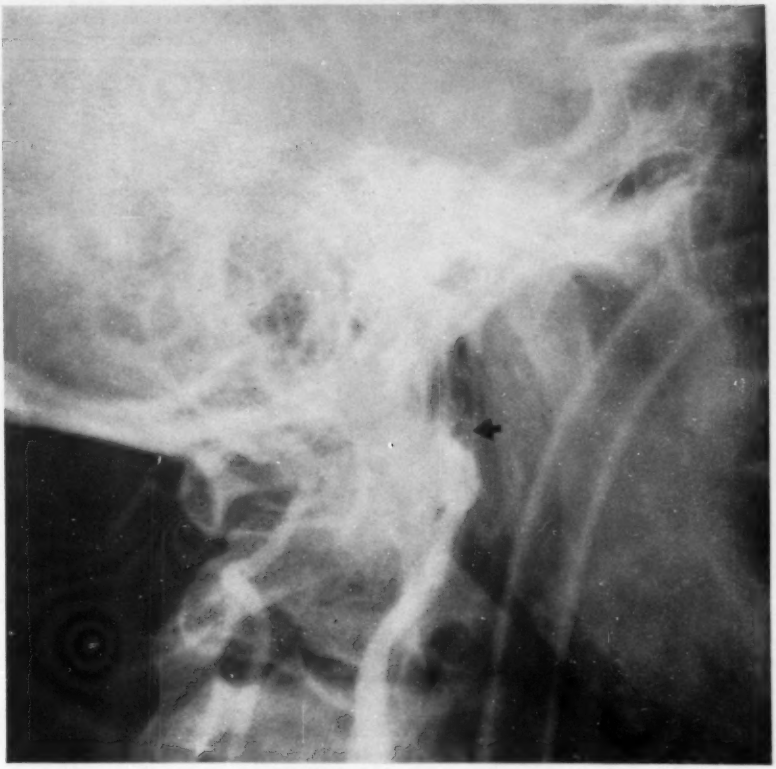

FIG. 4—Female, 62 years old, with partial occlusion of the common carotid artery in the neck (arrow).

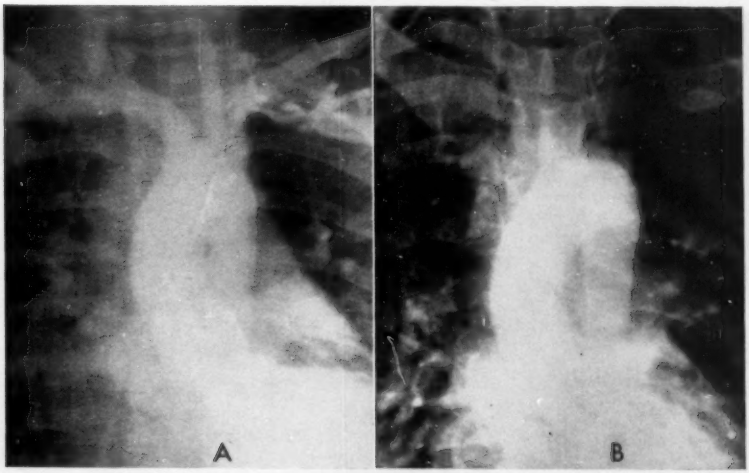

FIG. 5—Frontal angiocardiograms of the thoracic aorta and its branches. (A) Normal. (A) A female, 33 years old, with "pulseless disease." All three aortic arch branches are occluded just above their origins.

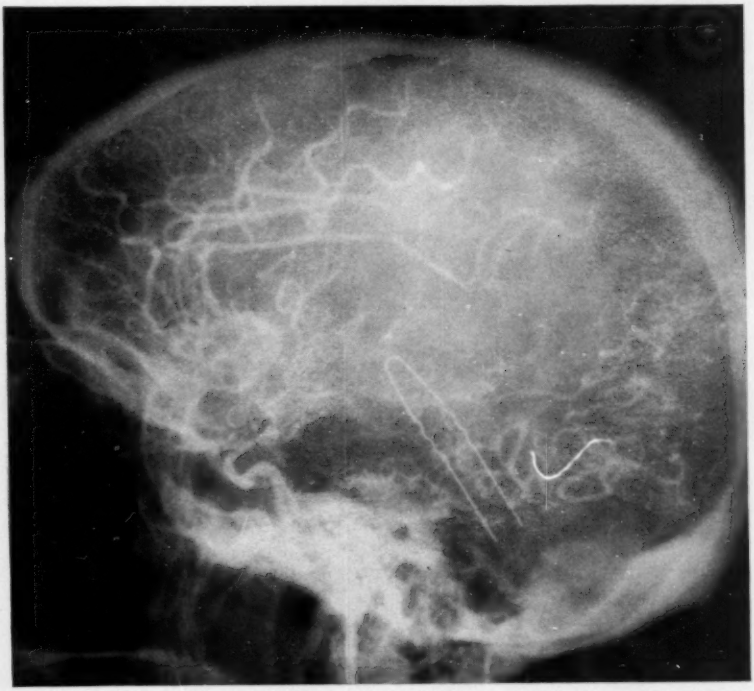

FIG. 6—Female, 33 years old, with "pulseless disease." Right carotid arteriogram shows segmental occlusion of the internal carotid and the middle and posterior cerebral arteries with remarkable local collateral circulation.

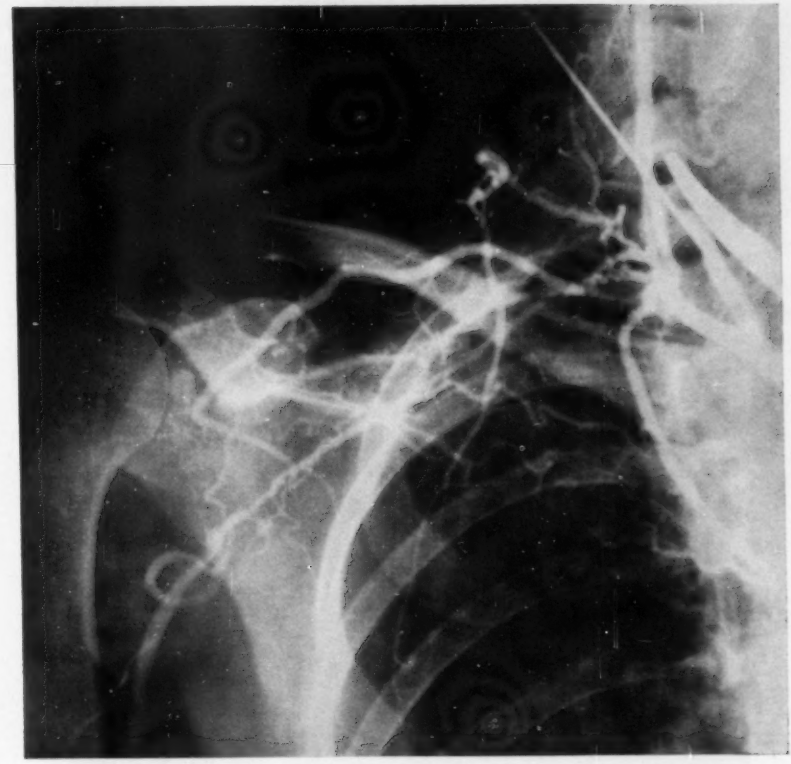

FIG. 7—A woman, 36 years old, with "pulseless disease." Right subclavian artery obstruction shown by retrograde right carotid arteriography. Collateral circulation to the arm is furnished by the internal mammary, transverse cervical and thoraco-acromial arteries.

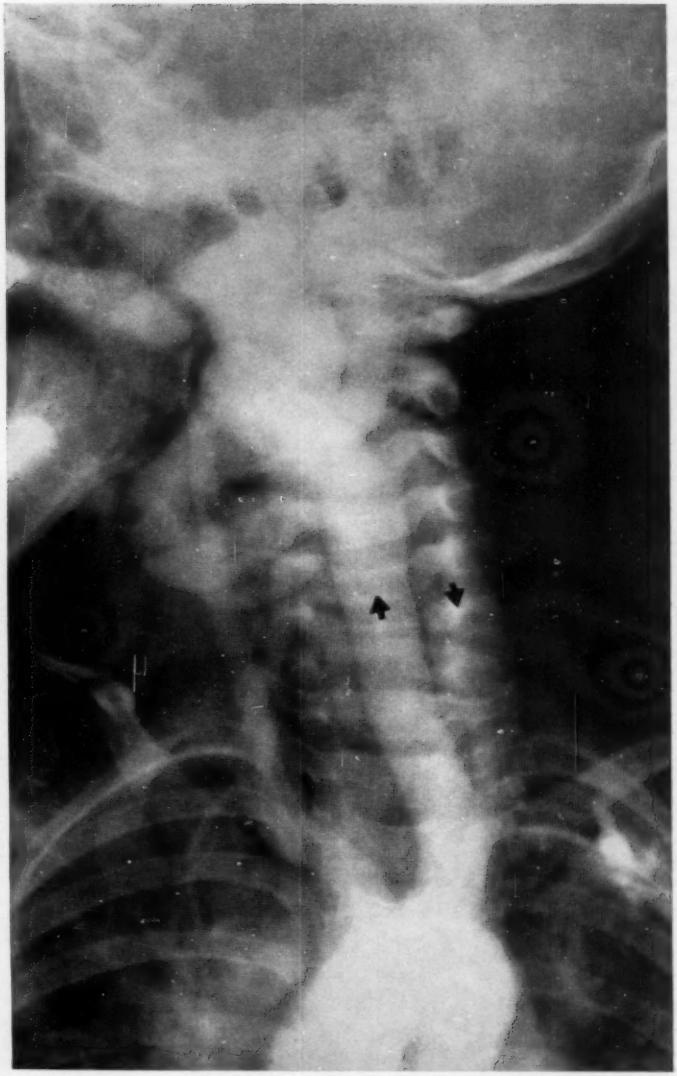

FIG. 8—Congenital cervical arteriovenous fistula in a girl, aged 3 years, shown by venous angiocardiography. The fistula is fed by the enormous left common carotid artery and drained by the internal jugular vein. No other arteries are involved.

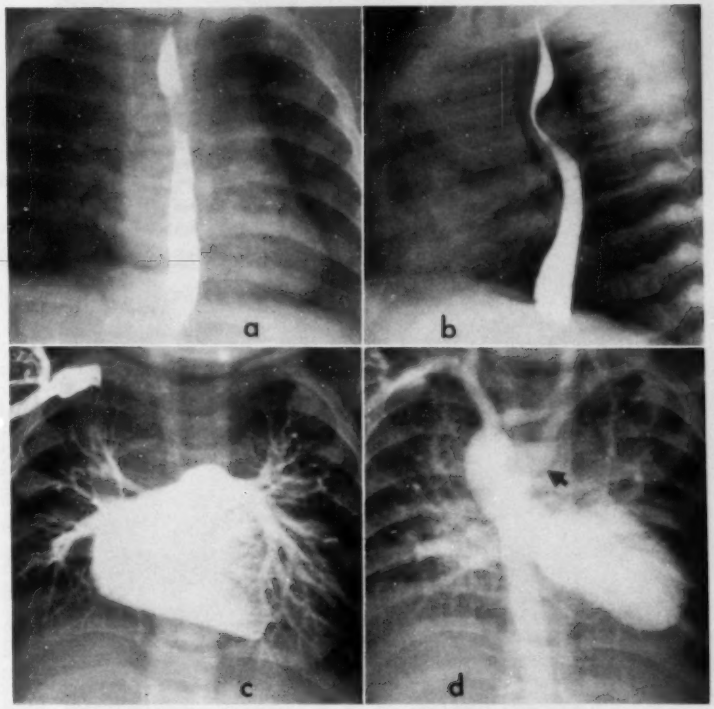

FIG. 9—An 8-month-old male with right aortic arch and retroesophageal aortic diverticulum giving origin to the left subclavian artery. (a and b) Compression and forward displacement of the esophagus and trachea at the level of the aortic arch. (c and d) Frontal angiocardiogram showing normal pulmonary arteries (c) and the aortic anomaly and diverticulum (arrow in d). The pulmonary artery is probably held against the trachea by a left ligamentum arteriosum.

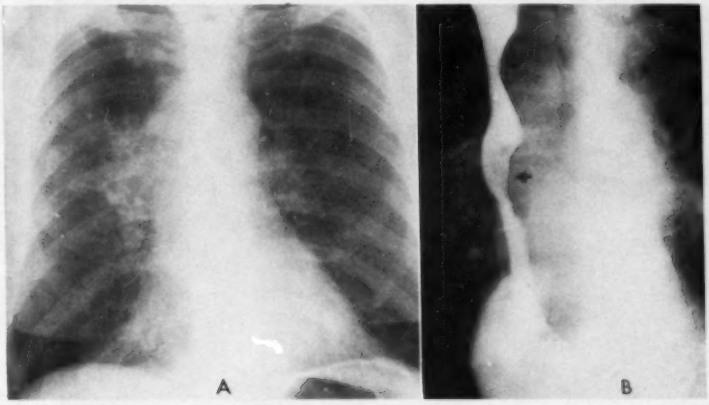

FIG. 10—Male, 61 years old, with suspected, but not bronchoscopically verified, bronchial neoplasm of right upper lobe. (A) Routine frontal view of chest. (B) Frontal angiocardiogram demonstrates neoplastic invasion of the superior vena cava (arrow).

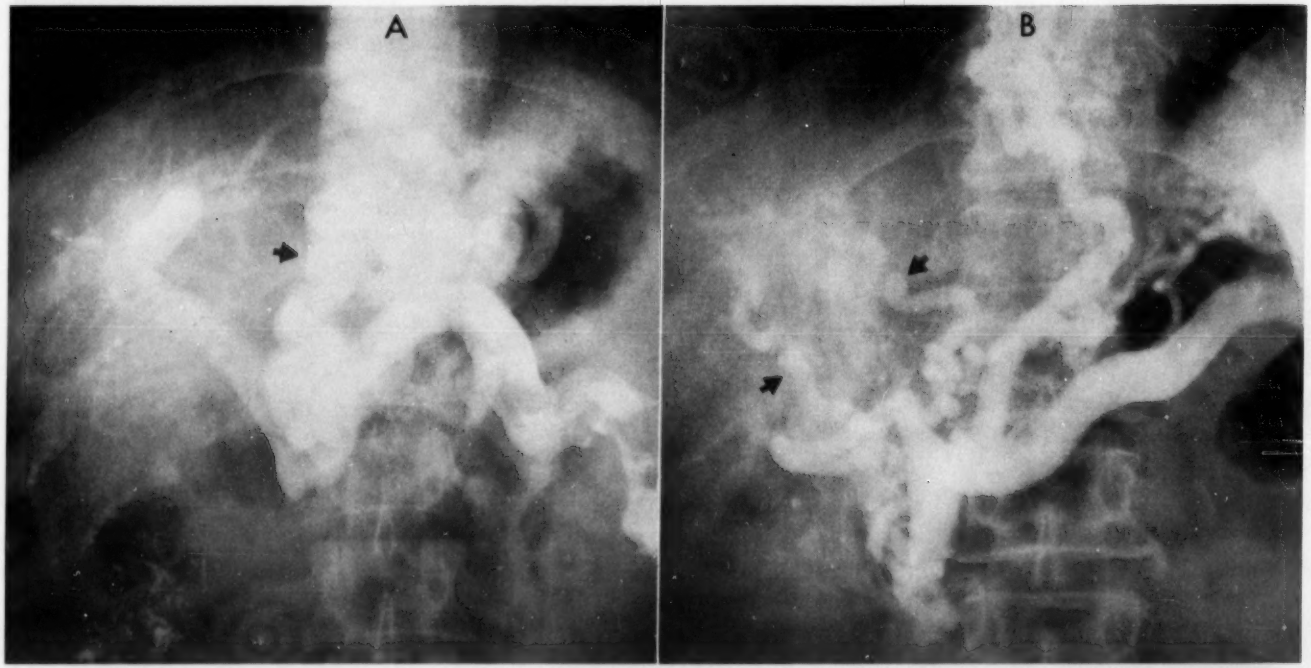

FIG. 11—Splenoportographic demonstration of esophageal varices. (A) Cirrhosis of the liver. The portal vein is patent. Huge varices (arrow) lying in the gastrohepatic omentum lead to equally large esophageal varices. (B) Extrahepatic portal-vein obstruction. The portal vein is not patent, but it is replaced by collateral vessels—so-called "cavernomatous transformation" of the portal vein (arrows). Esophageal varices fill from the coronary vein.

consultation at a later time in their course. You will recognize that in many instances these conditions can be diagnosed by simpler methods, but you will also recognize that the radiologic examination provides a better understanding of the gross pathologic change, uniquely precise diagnosis in clinical atypical cases, and certain details that may be of great surgical importance. Your awareness of these advantages may lead to earlier diagnosis and better consultation in difficult cases.

These angiographic techniques are named for that portion of the vascular system which is temporarily opacified, generally with some qualifying adjective denoting a certain feature of the method used. For example, one may speak of translumbar aortography or dural sinus venography, venous angiocardiography, or percutaneous splenoportography. Not all of these are new in conception or performance, for as early as 1923 the peripheral arteries and veins in living man had been temporarily opacified for examination, and by 1929 Egas Moniz had shown some of the diagnostic potentialities of cerebral arteriography. Other procedures were described in the interim, but only in the last eight to ten years has there been more or less unreserved application of any or all of them as the particular situation required.

Of the several factors contributing to the emergence of these contrast studies, undoubtedly the most important has been the brilliant progress in heart and blood-vessel surgery. The preoperative necessity for accurate and detailed anatomic and physiologic information continues to be the principal stimulus to the development and exploitation of these methods. Considerable credit is also due those who have provided safe, injectable contrast materials, sufficiently sensitive film, and adequate generating and filming equipment. These implements are constantly being improved. Last and not least, we must acknowledge our slowly developing appreciation of the considerable tolerance of the human cardiovascular system to puncture, catheterization, and perfusion. Since this is not unlimited, certain relatively small risks must be accepted, but without such tolerance this modern form of cardiovascular radiology would not exist.

To return then to the application of angiographic methods to ophthalmology and otolaryngology, let me make it clear that at the present time the circumstances requiring these methods are infrequent. Furthermore, it is not your responsibility to perform these examinations. Nevertheless, you may be the first to see the patient, and your awareness of these methods may lead to earlier diagnosis or better surgical consultation.

Let us consider carotid arteriography, for this is the most widely used of all forms of angiography and the one with greatest application to ophthalmology. It is most safely and expeditiously performed under local anesthesia by the percutaneous puncture of the carotid artery. For any well-trained neurosurgeon, this is an easy maneuver. Small amounts of one of several common urographic media are then injected, and films are made of the head and neck in several projections—always frontal and lateral—during the fleeting opacity of the vessels. Ordinary radiographic equipment suffices, but special equipment for simultaneous biplane serial filming reduces the necessity and added hazard of multiple injections.

It is hardly necessary to point out to this group that intracranial masses may be noticed first because of ocular symptoms—either loss of vision or oculomotor dysfunction—particularly when the lesions are in and about the sella turcica.

A 32-year-old Canadian airman was recently seen because of diplopia on right lateral gaze due to right lateral rectus paresis. Visual fields tests and reports of neurological examination revealed no abnormality. He was treated by recession of the muscle on two occasions, with only temporary benefit. Because of the patient's additional severe hypertensive retinopathy, lumbar splanchnicectomy was considered and the case was evaluated from this viewpoint. In the process, a discerning house officer ordered radiographs of the skull. These disclosed a destructive lesion at the base near the foramen ovale. A carotid arteriogram showed a laterally placed aneurysm near the cavernous sinus. Apparently it had never bled and was otherwise asymptomatic.

Dr. John Henderson, a colleague of mine and an Academy member, has thoroughly studied the ocular signs occurring with intracranial aneurysms. He found abducens involvement in only 7 per cent of 119 cases, and seldom without other ophthalmoplegias or trigeminal pain. The peculiar position lateral to the cavernous sinus may be responsible for the paucity of signs.

The case of a young woman is more typical. She had periodic, sudden temporofrontal headaches and recent progressive diplopia and lid ptosis due to oculomotor nerve involvement. Such symptoms suggest that the aneurysm involves either the supraclinoid portion of the internal carotid artery or the posterior communicating artery. Either direct pressure on the nerve or bleeding could have been responsible for the paresis, since both were present when the aneurysm was exposed and surgically "trapped."

Because of their intimate relation to the optic nerve and chiasm, such aneurysms of the supraclinoid portion of the carotid artery or of the anterior cerebral artery are the most likely of all to cause visual loss, either on the same side or as a homonymous hemianopsia.

The usefulness of cerebral arteriography in the diagnosis and treatment of intracranial aneurysms can hardly be overstated. Aneurysms were correctly located in 94.5 per cent of Dr. Henderson's cases. In the 6 missed cases, 5 were filled with a thrombus. Such accuracy of localization is obviously necessary if surgical treatment is to be properly guided; so directed, surgical treatment raises the incidence of survival from 26 per cent to 69 per cent.

Other mass lesions, of course, may be localized by arteriography, and some, such as meningioma, glioblastoma, and metastatic carcinoma, may be rather accurately identified histologically, on the basis of special vascular patterns. A mass, without special pattern but recognized by arterial displacement, occurred in a young boy as a sequel to mastoiditis. A temporal lobe abscess was suspected clinically, but ventriculography was not as decisive in localization as usual, nor as the subsequent carotid arteriogram. Twenty cubic centimeters of pus was evacuated, and thorotrast was instilled. Later the abscess was excised.

Of considerable interest is the rather uncommon condition, internal carotid thrombosis, which is being recognized more frequently because of wider use of arteriography. In persons between the ages of 40 and 50, this condition usually is evidenced by sudden hemiplegia and aphasia, accompanied by orbital or suboccipital pain, but usually not by unconsciousness or convulsion (only 20 per cent). Considering that the ophthalmic artery is the first branch of the internal carotid artery, the infrequency of visual loss is puzzling at first thought. However, it has been demonstrated that collateral circulation between the ophthalmic and external carotid arteries is

usually well developed in such cases. This collateral circulation makes it possible to treat internal carotid aneurysms by carotid ligation without loss of vision, even when ligation of the ophthalmic artery itself is included. In fact, if the thrombus does not extend above the ophthalmic artery, this artery becomes a contributor to the blood supply to the brain. Should the collateral circulation not be available or should the thrombus extend into ophthalmic and internal carotid branches, one may find complete visual loss and, later, optic atrophy on the affected side, temporal hemianopsia on the opposite side, or homonymous hemianopsia. The observation of reduced retinal systolic arterial pressure (diastolic pressure may be unchanged) may give the ophthalmologist opportunity to make a positive diagnosis.

Although thrombosis usually arises spontaneously because of arteriosclerosis, or perhaps because of compression by the lateral process of the atlas, it also can occur after blunt trauma to the neck. A 42-year-old woman suffered a right clavicular fracture and a right rib fracture in an automobile accident. A left hemiplegia and left homonymous hemianopsia developed, with forced conjugate deviation of eyes to the right. Retinal-artery pressures were 26/40 in the right eye and 65/115 in the left eye. Open carotid arteriography confirmed the suspected internal carotid occlusion.

Of particular interest is a rare form of carotid occlusion occurring as part of "pulseless disease" or Takayasu's disease. This consists of a segmental obliterative arteritis of the great branches of the aortic arch, and it is usually seen in young women from 15 to 35 years old. A wide variety of transient or permanent cerebral symptoms is accompanied by recurrent blurring of vision or blindness and by lack of palpable arterial pulses in the neck and arms. Besides demonstrating the visual loss, one may observe optic and iris atrophy, a peripapillary network of new vessels, lowered retinal arterial pressure, and peculiar slowing of the circulation so that the blood elements may be seen moving in segments through the vessels of the retina. Unfortunately, cataracts are frequent and may obscure these interesting findings, which allow the ophthalmologist to recognize the condition by a glance into the fundus.

Recently a patient with such symptoms and signs, a woman, age 33, was seen at the University Hospital. The case was studied by venous angiocardiography. A large amount of contrast medium was rapidly injected into the antecubital vein, and films were made of the chest with an automatic serial filming device at the rate of two per second. These films disclosed occlusion of all the great branches of the aorta. The only patent arteries to the head were the vertebrals, and these filled by collateral circulation. A subsequent open carotid arteriogram indicated that the obstruction was segmental in the right carotid artery, sparing the cervical internal carotid but then occluding its branches in the head.

Another young woman, who probably was seen earlier in the course of this irreversible disease, reported periodic syncope and recent blurring of vision. Her internal carotid circulation is demonstrably intact, but she has bilateral subclavian artery obstruction. This was well delineated by retrograde carotid arteriography. Her leg arteries were also studied by translumbar aortography. Under spinal anesthesia, a long needle was inserted percutaneously into the lumbar aorta, and some concentrated contrast material was rapidly injected. Filming required only conventional apparatus and showed nicely the normalcy of these arteries.

Another disease of the orbit, one of plethora rather than paucity, is the cavernous carotid arteriovenous fistula. Generally arising because of basilar skull fracture, this fistula produces the easily recognized clinical features of pulsating proptosis, venous dilatation, and audible bruit. Carotid arteriography is principally useful, not for diagnosis but for identifying with certainty the arterial supply and the venous drainage, which is predominantly through the ophthalmic vein.

Similar fistulas, although of congenital origin, may be encountered in the neck, and patients with such disorders come to the otologist for treatment because of his familiarity with that region. Angiography is here of even greater value for the identification of arterial feeders, which must all be ligated if treatment is to succeed. Generally these are multiple, but they may be single, as in the 3-year-old girl studied recently. Venous angiocardiography provides adequate peripheral artery opacification in such small patients.

The otolaryngologist is frequently consulted regarding noisy or obstructed respiration in infants, generally labeled as laryngeal stridor and due to some laryngeal anomaly. Among such noisy breathers he may find an occasional one with dyspnea and choking at mealtime. Besides tracheoesophageal fistula, neurologic abnormality, and other causes, a congenital vascular anomaly with esophageal and tracheal obstruction has to be considered. There are several varieties, but all can be recognized by careful examination of the barium-filled esophagus. Although minor variations may allow differentiation of these, an angiocardiogram is a safe and simple way to get exact anatomic information for the planning of surgical treatment.

In his capacity as an endoscopist, the otolaryngologist is quite familiar with the vagaries of bronchial neoplasm. Ordinarily he succeeds in verifying its presence and giving some indication of its resectability. But the bronchoscopy may yield only negative findings even though an unresectable tumor is present. In these circumstances, simple venous angiocardiography may be of help in identifying the disease and its mediastinal extensions.

A 59-year-old man came to the otology clinic because of hoarseness of two months' duration. He had some recent weight loss, fever, and chest tightness. The left cord was paralyzed. Radiographically, the chest was initially considered normal, but on reconsideration there seemed to be abnormally wide separation of the left bronchus from the aortic arch, which otherwise appeared normal. Angiocardiography demonstrated compression of the left pulmonary artery near the arch of the aorta and slight irregularity in the underside of the arch. Bronchoscopy showed extrinsic compression of the left bronchus, but results of biopsy were negative. At thoracotomy, unresectable neoplasm was found invading the left pulmonary artery and aorta.

In the case of another man with clinically and radiologically obvious bronchial neoplasm, the reports on two bronchoscopies and biopsy of a paratracheal lymph node were negative. At angiocardiography, mediastinal and unsuspected superior vena caval invasion was shown, indicating the unresectability of this tumor also. We do not recommend angiocardiography if there are other indications of unresectability; but if more information is needed, it is used without hesitation. Occasionally it is incorrectly negative, but seldom the reverse.

Endoscopists are sometimes called upon when gastrointestinal hemorrhage raises the question of esophageal varices and generally provide accurate informa-

tion by esophagoscopy, certainly more accurate than that provided by the conventional barium examination. A new procedure has recently been introduced, more accurate than either of these and of additional value because it locates the portal obstruction. This is percutaneous splenoportography, performed by the injection of contrast material into the spleen through the abdominal wall. This material promptly finds its way to the splenic and portal veins and fills the collateral circulation, including the esophageal varices, if there be any form of portal obstruction. Bleeding varices are, of course, most often due to cirrhosis of the liver, but it is interesting to find that nearly one third of such cases show no cirrhosis. The obstruction is due to thrombosis of the portal vein. In this location, the preferred form of decompressive treatment, the portocaval anastomosis, cannot be employed, but rather a splenorenal shunt must be created. This differentiation is important preoperatively and is most directly made by splenoportography. In our hospital this procedure has replaced esophagoscopy for the study of esophageal varices.

These examples should suffice to indicate certain distinguishing features of this new field of angiographic radiology. Foremost is its requirement for teamwork—teamwork in examination, planning, execution and interpretation. In relating these experiences to you, I am simply the spokesman for our team, whose members, depending on the clinical situation, vary from neurosurgeon, to thoracic and general surgeon, to internist, and to pediatrician and radiologist. Mutual interest lies in diagnosis, of course, but often the search is for qualifying details that help decide the feasibility of and the best approach to surgical treatment. The hurdle of initial diagnosis is often past before these methods are applied to uncover gross pathologic and physiologic information that formerly was supplied only by direct inspection. Progress has been rapid in many fields, and shows no sign of abatement. Although presently of only occasional application to ophthalmology and otolaryngology, angiography may be confidently expected to have more important contributions to make to them in the future.

GLAUCOMA: A PUBLIC HEALTH PROBLEM

ARNOLD B. KURLANDER, M.D.
WASHINGTON, D. C.
BY INVITATION

As a public health officer, whose training must necessarily have stressed breadth rather than depth, my coming here today to discuss glaucoma before a group of distinguished specialists requires, perhaps, a word of explanation. Glaucoma has become both a public health challenge and a public health responsibility, as I hope to make clear during my remarks.

First, I would briefly recall to you some of the better known examples of successful cooperation between the public health profession and the profession of ophthalmology. We all remember the long and successful fight against ophthalmia neonatorum in which public health officers, ophthalmologists, and members of voluntary health associations worked closely together. Visual testing programs for school children are traditionally cooperative programs between our two groups. The research program of the National Institute of Neurology and Blindness provides additional examples of cooperative endeavor. And no more dramatic result of this working together can be found than the recent solution to the problem of retrolental fibroplasia in premature infants.

Beyond these specific illustrations of cooperative effort, we share—your profession and mine—a common philosophy. We are both preventive-minded. Prevention is the watchword of the public health movement. And perhaps no medical specialist is more concerned with preventive measures than is the ophthalmologist.

Prevention is based on forethought. Prevention means more than averting the occurrence of a disease. In some instances, depending on existing knowledge and opportunity, complete prevention is possible; in others, only intervention is possible to prevent the development of further disability. But preventive opportunities are never lost completely until the patient himself is lost.

A fundamental aspect of prevention is the active search for cases of chronic disease among seemingly healthy people. We call this casefinding. In blindness due to glaucoma, prevention through casefinding is not only possible but feasible. When detected early, glaucoma can be successfully treated, and in a large number of cases blindness can be prevented or its onset delayed. The key words here are "early detection." With the cooperation of the ophthalmologist, the public health officer can grasp this great opportunity to apply public health methods to the battle against blindness.

It is our duty to meet this challenge, because the prevention of blindness is truly a public health responsibility. The impact of chronic disease on our population is now recognized as the Nation's "number one" public health problem. Glaucoma, estimated to strike 2 per cent of all people over 40, is a prime example of a chronic progressive disease. More than 12 per cent of all blindness is traceable to this one cause, and there is every indication that the glaucoma prob-

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lem will grow as our population continues to age. The economic costs of glaucoma are matched only by the social costs represented by individual and family suffering and by community burdens that must be carried. All these things add up to a public health responsibility.

While emphasizing the public, or community, nature of this problem, I want to assure you that the needs and rights of the individual patient always come *first* in any genuine public health program.

The potential contribution of programs for the early detection of glaucoma is controlled by the efficiency and extent of screening. May I stop here to repeat what cannot be too often repeated: namely, that screening is *not* diagnosis. Screening attempts only to sort out in a population of apparently well people those who probably do have a disease from those who probably do not. It is realized that there will be "errors" in the form of false negatives and false positives. Diagnosis, on the other hand, must always be the physician's personal judgment concerning the patient's condition —a judgment based on *all* the available information. Screening merely reduces the otherwise unmanageable number of potential suspects to a group that may feasibly be given thorough diagnostic study by physicians.

Practically all the glaucoma screening that is done in this country today is carried on by ophthalmologists. Thus we have a problem of pure logistics, dictated by the number of skilled screeners and the number of potential screenees, and by the fact that the ophthalmologist alone can make the diagnosis. Since the ophthalmologist is irreplaceable as the diagnostician, other hands must be made available to release him of much of the screening burden.

There are 59 million Americans over 40 years of age. If the present number of ophthalmologists screened only this group each year, every ophthalmologist would have to test almost 8,000 individuals in order to identify a possible 160 cases of glaucoma in this group. If this sounds to you absurd, remember that 8,000 is just each ophthalmologist's share of the total United States population over 40 years of age (and no allowance is made for testing the population under 40 years of age, which obviously includes many cases of glaucoma). If the ophthalmologist undertook this job unaided, while continuing to provide all diagnostic services, the program would fall of its own weight.

Clearly, this figure of 8,000 must be reduced to something closer to the 160 which current estimates of the prevalence of glaucoma in this country would indicate as the anticipated number of cases in an adult population of 8,000 persons. Clearly, also, some mechanism is needed to produce referrals to the ophthalmologist on a manageable basis, but referrals that have been *selectively* made. Screening programs constitute such a mechanism, and they can complement the traditional referral pattern now in effect in American medical practice.

Since screening, properly and adequately carried on in all parts of the country, is currently the soundest approach to the prevention of blindness caused by glaucoma, the Public Health Service plans to develop and encourage glaucoma detection activities on two broad fronts.

On the one hand, we must help to multiply the skilled hands that can do glaucoma screening, through stimulating the acceptance of such screening as a standard element in the physical examination, wherever the examination is given—in physicians' offices, in hospitals, in clinics, as a part of industrial health programs, or under any other circumstances.

In this effort we have been inspired by

the statement of Dr. Trygve Gunderson, who said (J.A.M.A., Nov. 6, 1954), "I am convinced that if the American physician were taught the importance of this simple test, tonometry would immediately become as much a part of the general physical examination as the Wassermann test and the measurement of the blood pressure are today."

The other broad front on which we hope to push forward in the encirclement of the glaucoma problem, is that of community action. Through consultation, through demonstration projects, through financial support, we plan to help strengthen and expand the existing programs of State and local health agencies.

Serving both these fronts are several proposals now being developed by the Public Health Service, whereby we hope to make a contribution through evaluation of screening techniques and methods of instrument sterilization, and through studies of the epidemiology of glaucoma.

Thus far I have spoken in rather general terms (as one must when treating so important a subject briefly), but at this point I should like to tell you some of the specific things that we are going to do about glaucoma and some of the things that are already happening. Nobody will pretend that the control of glaucoma can be achieved in this country overnight. It is a long-term job—one that may well consume the remaining professional careers of most of us here today. Preparation for this considerable undertaking should be as complete as possible. With the idea of developing a balanced program in a systematic way, we have requested the assistance of a group of consultants, drawn from the ranks of the country's leading ophthalmologists, to advise the Public Health Service on the conduct of cooperative studies into the basic problems of glaucoma detection. A preliminary protocol has been drafted and is now under study by our consultants. We hope to perfect arrangements with leading eye clinics so as to initiate cooperative studies in areas identified as significant by the consultants.

The broad areas of study and development may be briefly described here. We plan to evaluate various glaucoma screening tests, including tonometry, rapid visual field examinations, and other techniques, in order to learn more of the effectiveness of these methods and their acceptability to physicians and patients. This procedure has, in recent years, proved judicious and effective in our work in the field of diabetes screening, and we anticipate similar gratifying results in glaucoma.

Diagnostic standards will likewise receive careful and extensive consideration, so that when we are prepared to present data on screening, we may be also in a position to contribute to the refinement of diagnostic standards.

With the anticipated wider use of tonometers, better methods of sterilization (safe, fast, and economical) will be needed. We plan studies in this direction, also.

Investigation of the epidemiology of glaucoma is another important study area. The correlation of glaucoma with age is accepted, but we need more significant data on further correlations that would be helpful in future casefinding operations — correlations with sex, genetic background, geographical location, environment, and with many other population characteristics. We know that these things can be learned, because they are being learned in connection with many diseases—with diabetes, tuberculosis and venereal disease, to mention but a few. When epidemiological facts

have been established, casefinding can be directed in a more efficient and productive manner.

In all these studies we shall aim at the accumulation and sharing of knowledge that will permit the most flexible possible approach to the problem. It is our hope that this knowledge will be helpful to those who have the responsibility for making decisions about glaucoma detection programs.

I have mentioned the two fronts on which we plan to conduct the public health campaign against glaucoma: the professional front and the community front, they might be called. On the professional front, in addition to encouraging the inclusion of tonometry (or other methods of testing) in general physical examinations, we plan to stimulate in every possible way professional education in this area through the medical schools and the schools of public health. The medical student should be as familiar with the tonometer as he is with his prized stethoscope. The public health officer should be as aware of glaucoma casefinding as he is of tuberculosis casefinding.

It is my firm conviction that the office of the general practitioner represents a potentially great but hardly tapped center for glaucoma screening activities. These 86,000 screening sites, through which literally millions of patients pass yearly, could make an unequalled contribution to glaucoma detection. Recognizing the heavy demands upon the physician's time, we must do everything possible to make glaucoma screening an acceptable and feasible procedure within the framework of his daily practice.

On the community front we plan, as I have suggested, to support demonstration projects and to assist State and local programs as budgetary conditions permit. The make-or-break factor in any public health program — complete and conscientious follow-up to assure that the patient goes to his physician for diagnosis and treatment—will be built into *every* project in glaucoma detection.

Training will remain a key task of the Public Health Service for some time to come. State and local public health personnel will require many special types of training (in-service, institutional, and by other means) in order to staff future glaucoma detection programs on an adequate basis, both qualitatively and quantitatively. Community education, which should keep pace with professional education, will be stimulated so as to encourage public acceptance of and participation in detection programs.

Finally, it should be clear by now from everything I have said that I need your help. This is an understatement, frankly, because I can think of few programs ever initiated by the Public Health Service where we stood in greater need of guidance and cooperation from the qualified professionals in the field.

Your contribution in the prevention of blindness has been a priceless one. I know that it will continue to be.

SURGICAL MANAGEMENT OF COMPLETE AND INCOMPLETE BONY ATRESIA OF THE POSTERIOR NARES

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CONGENITAL atresia of the posterior nares is not seen often, yet judging by the number of papers appearing in the literature on the subject, this condition is being recognized more frequently now than heretofore. It therefore becomes a timely subject for discussion, and it is especially pertinent to describe a logical surgical technique for its correction.

Since 1853, when the first case was seen, many and varied techniques to obtain a permanent natural opening in the posterior nares have been tried, but without success. The surgery at the beginning was very simple; then it became more technical, with no better results. This fact is significant in demonstrating that no uniform procedure has yet been standardized. The following is a résumé of the various types of surgery and instruments used for the purpose:

The first attempt at making an opening in the posterior nares was made with a trocar. This was followed by the use of galvanocautery, chemical cauterization, a hand drill, a chisel, and a curet. As the technique improved, a septal flap was created and the posterior end of the vomer was removed with a rongeur. Later, a submucous resection was performed, with the removal of the posterior third of the septum. A transpalatine approach was next described, in which the vomer alone was removed. A sphenoid punch was used to remove the posterior edge of the septum at the time an opening was created. Electrocoagulation was tried. The perpendicular plate of the ethmoid was removed after perforation of the atresic nares with a chisel. The mucous membrane over the anterior surface of the atresic nares was elevated after a submucous resection had been performed, and its elevation was followed by the removal of half an inch of the membranous septum. The posterior part of the vomer was removed, the mucous membrane split, and a no. 18 catheter inserted through the split. A submucous resection was performed, with the removal of the vomer and posterior third of the septal soft tissue. An approach by way of the antrum was employed. Some surgeons attempted to graft skin to line the opening, but they were unable to bring the graft in through the back of the nose. The idea was a good one, but it was not practical.

By following the evolution of the various methods, it can be noted that all attempts to create a permanent opening in the posterior nares failed except for the transpalatine approach, which is the one now most commonly used, and which sacrifices portions of the palate and nasal structures.

After an evaluation of the different techniques, one must conclude that all of them were more or less destructive and that none succeeded in producing a permanent opening of normal size. These methods failed because the approach and the anatomy were not prop-

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FIG. 1—Patient operated upon for the correction of a left incomplete bony atresia. Note the anomalous flatness of the malar eminences, producing a strange facial appearance. (Beinfield[5])

erly taken into consideration. Instead, the tissues present that could have been utilized to prevent the closure of the newly created opening were destroyed. In using the technique which I shall describe, none of the tissues or surrounding structures are destroyed, but rather they are fashioned and preserved in such a manner as to be surgically, anatomically and physiologically correct, with a permanent opening as the final result.

Embryology

Embryologically, atresia of the posterior nares is believed to be due to the persistence of the bucconasal membrane, with a mesodermic layer between the two membranes. The mesodermic layer develops to form the bony portion of the atresia.

Anomalies

It is not unusual to find other anomalies associated with atresia of the posterior nares. In one of my cases there was a facial asymmetry; in another, an absence of both malar eminences (fig. 1). Other men have reported a double tragus on each ear, a coloboma of the iris, and a cleft palate. A hereditary relationship in some of these cases has also been reported.[3,4]

Anatomy

Anatomically, atresia of the posterior nares is a congenital anomaly, situated at the junction of the hard and soft palates, completely closing off the posterior choana on the affected side. It may be unilateral or bilateral. There are two definite types: complete bony atresia and incomplete bony atresia. Complete bony atresia can be defined as atresia in which the posterior choana is completely closed by bone and covered by the nasal mucous membrane in front and by the pharyngeal mucous membrane behind. In incomplete bony atresia, the atresia, although complete in form, is only partly bony, and is partly membranous. The bony portion originates from the lateral wall of the posterior nares, whereas the membranous portion comes from the

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septal side. The membranous portion is very thick, apparently due to a fusion of both the nasal and pharyngeal mucous membranes. Where the membranous portion meets the bony portion, the membranes split or separate into a nasal and pharyngeal membrane which envelops the bone. A completely membranous type of atresia has also been described. An understanding of the anatomy is necessary in order to appreciate the rationale of the technique which will be described later.

Symptoms

Patients with atresia of the nares chiefly complain of complete nasal obstruction on one side of the nose, accompanied by a thick mucoid discharge. Upon examination, the inferior turbinate on the obstructed side appears pale and edematous, with marked redundancy of the mucous membrane, almost polypoid in nature. Thick, glary mucus is found in the inferior meatus. The surgeon occasionally operates upon one of these patients for the correction of a deviated septum to relieve the nasal obstruction, only to find, to his surprise, that an atresia of the posterior nares exists.

Diagnosis

The diagnosis is comparatively simple. Atresia should be suspected in all cases of asphyxia neonatorum and in cases in which there is complete nasal obstruction. In the young child, the posterior nares can be routinely examined with the finger in the nasopharynx when adenoids are removed. In this manner an occasional case of atresia of the posterior nares may be found to account for a history of persistent nasal obstruction. Confirmation of the diagnosis can be made by the inability to pass a catheter or dye through the nose into the nasopharynx, by postnasal examination with a mirror, and by roentgen studies with Lipiodol.® For greater contrast in the roentgenogram, it is advisable to anesthetize and shrink the mucous membrane before instilling the lipiodol. There is no method of making an anatomic diagnosis, either clinically or by roentgenogram, to determine in advance whether the atresia is complete, incomplete, or membranous.

OPERATIVE TECHNIQUE

This operation for the correction of bony atresia of the posterior nares is very simple to perform.[7,8] It is primarily limited to cases occurring in the older child and the adult.[1,2,5] A different technique is used for the young child and infant.[4,6]

There are two important steps in the technique. First, adequate room in the nose is obtained by fracturing the inferior turbinate upward. Second, the approach to the posterior nares is facilitated by making the initial incision on the floor of the nose as far forward as possible.

A good headlight is necessary for proper illumination. The operation is performed under local anesthesia if the age of the patient permits. Any mucus in the nose is removed before beginning the topical anesthesia. Long strips of cotton, saturated with equal parts of pontocaine, 2 per cent, or cocaine, 10 per cent, with 1:1000 adrenalin are then inserted in the nose, one strip placed between the septum and the inferior turbinate and another on the floor of the nose. The nasal mucous membrane on the floor of the nose, nasoantral wall and lower half of the septum is well infiltrated with a local anesthetic. The anesthesia completed, the next step is very important. The inferior turbinate must be turned upward so that its inferior border assumes the position of a superior border (fig. 2, A and B). This procedure increases the working area in the lower half of the nose by taking advan-

tage of the space of the inferior meatus and that occupied by the inferior turbinate. A U-shaped incision is now made, beginning along the floor of the nose just behind the anterior edge of the maxilla. It is brought down to the bone and extended up the nasoantral wall to the attachment of the inferior turbinate on one side and the lower half of the septum on the other side (fig. 2, C). The mucoperiosteum is elevated easily when the separation is started on the floor of the nose, where the line of cleavage for the elevation of the mucosa on the septum and the lateral nasal wall can be readily found. A sharp septal periosteal elevator is inserted, closely hugging the bone and the elevation is extended to the back of the nose until the bony atresia is reached. The danger of perforation is practically nil, and there is little or no bleeding during the operation. After the nasal mucous membrane has been completely elevated, a long-billed Killian nasal speculum is introduced between the elevated nasal mucosa and the bone of the floor of the nose. By spreading the Killian speculum wide, the bony portion of the atresia comes into view and is now visualized in its entirety. The exposure is very good (fig. 2, D). If the atresia is completely bony, the entire posterior choana will be seen to be closed only by bone. However, if the atresia is incompletely bony, the amount of bone present is necessarily less, and its exposure therefore is reduced by the membranous portion of the atresia, which closes off the rest of the choana (fig. 2, E). In completely bony atresia, the bone is freed from its attachment with a no. 10 gouge, which is placed first on a level with the floor of the posterior choana, then on the septal side, roof and lateral wall, and is tapped gently until the sense of resistance is lost. After the bony portion is completely separated from its attachment, it is readily peeled off the pharyngeal mucous membrane with a periosteal elevator or bayonet forceps (fig. 2, F). A posterior choana of normal size is now created, although it is still completely closed by the pharyngeal mucous membrane. To complete the final opening, the pharyngeal and nasal mucous membrane are treated separately. First, a small circular portion of the pharyngeal mucous membrane is removed with a no. 11 Bard-Parker blade on a no. 7 handle (fig. 2, G), or a small tonsil punch forceps, leaving a large rim of mucosa which overhangs the newly created bare bony rim. While doing this, care is taken to protect the posterior pharyngeal wall from injury with the knife, by keeping the finger in the nasopharynx against the opening closed by the pharyngeal mucosa (fig. 2, H). The Killian speculum is now removed, and the previously elevated nasal mucosa is returned to its former place against the septum, floor of the nose, and nasoantral wall. The replacement of the nasal mucosa now closes the posterior nares from the nasal side. A circular portion of the replaced nasal mucosa, similar to the removed portion of the pharyngeal mucous membrane, is also removed (fig. 2, I). This step now completely opens the posterior choana, leaving two large circular strips of mucous membrane overhanging the newly created bony rim, one on each side, with their raw surfaces facing each other (fig. 2, J). When these membranes heal together, this newly created natural opening becomes completely lined by its own nasal and pharyngeal mucous membranes, thereby preventing it from closing. Either membrane alone could accomplish the same result. Using the technique for placing a postnasal pack, a piece of rubber tubing is passed into the nose by way of the nasopharynx so as to bring the pharyngeal mucous membrane into the nose for better coaptation with the nasal mucous membrane (fig. 2, K).

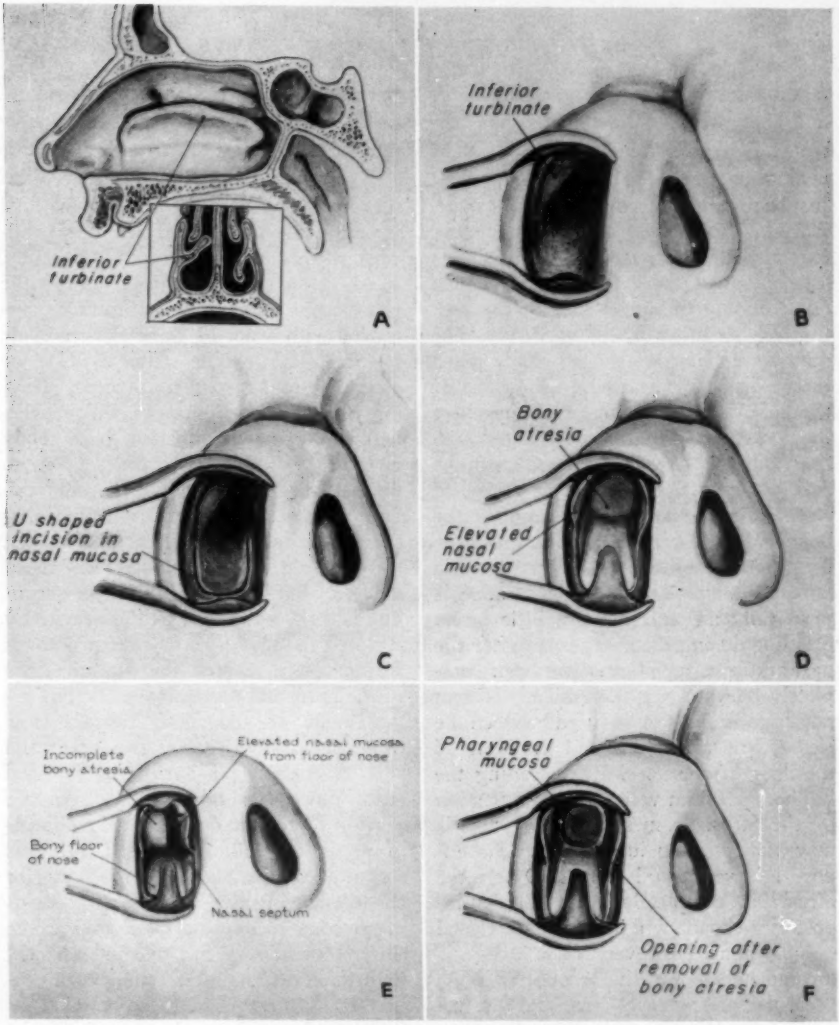

FIG. 2—(A) Inferior turbinate is fractured upward, so that its inferior border assumes the position of a superior border. This procedure increases the working area in the lower half of the nose by taking advantage of the space in the inferior meatus. Insert—sagittal view.

(B) Same as Figure 2,A, as seen through nasal speculum.

(C) The U-shaped incision is started on the floor of the nose, just behind the anterior edge of the maxilla, and is brought down to the bone. From here it is carried up the nasoantral wall to the attachment of the inferior turbinate on one side and halfway up the septum on the other side.

(D) The nasal mucous membrane has been elevated from the floor of the nose, nasoantral wall and septum, exposing the complete bony atresia. The elevated nasal mucous membrane is held above the upper blade of the Killian nasal speculum.

(E) That part of the nasal mucous membrane covering the incompletely bony portion of the atresia has been elevated, exposing the bony portion of the atresia. The rest of the nasal mucous membrane is fused with the pharyngeal mucous membrane to form the membranous portion of the atresia. The membranous portion of the atresia is behind the elevated nasal mucosa mesially and is not seen.

(F) The complete bony atresia has been separated, with a no. 10 gouge, from its attachment on a level with the floor of the nose, the septal side and nasoantral wall of the posterior choana. The bony atresia has been removed from the pharyngeal mucous membrane, demonstrating the bare bony rim of the permanent newly created natural opening with the pharyngeal mucous membrane still intact.

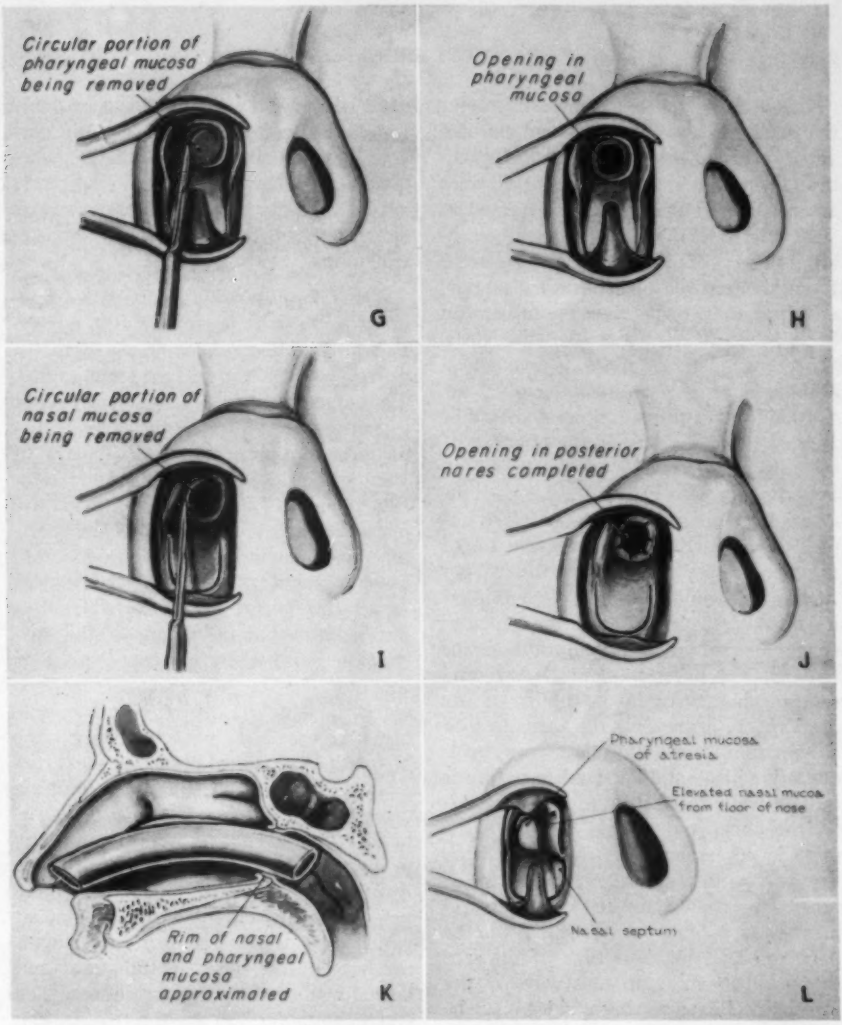

FIG. 2, continued—(G) With a no. 11 Bard-Parker knife, a circular portion of the pharyngeal mucous membrane is being removed, leaving a small rim of its mucosa overhanging the newly created bony rim.

(H) The circular portion of the pharyngeal mucous membrane has been removed as the first step in making an opening in the posterior nares. The nasopharynx is seen through the opening. The nasal mucosa is still held elevated by the Killian speculum.

(I) The Killian speculum has been removed, and the previously elevated nasal mucosa has been returned to its former position. This procedure now closes the posterior nares from the nasal side. A circular portion of the nasal mucosa of the posterior nares, similar to that of the pharyngeal mucosa, is also removed.

(J) The posterior nares is now completely open. Stellate incisions are made through the nasal and pharyngeal mucous membranes which overhang the newly created bare bony opening. The raw surfaces of these two membranes face each other and heal together around the bare bony rim, thereby preventing it from closing.

(K) The rubber tubing, which is twice the size of the opening of the anterior nares, is passed into the nose by way of the nasopharynx, approximating the nasal and pharyngeal mucous membranes which overhang and cover the newly created bare bony opening. The tubing is removed after five days to one week. The inferior turbinate returns to its previous position after the tubing has been removed.

(L) In incompletely bony atresia, the bony portion has been removed, exposing the pharyngeal mucous membrane which joins with the nasal mucous membrane at the junction where the bone is absent to form the membranous portion of the atresia mesially. The membranous portion is behind the elevated nasal mucosa. (Beinfield[5])

In incomplete bony atresia, after the bone has been removed and the elevated portion of nasal mucous membrane has been replaced, the membranes are considered as one and are treated as such (fig. 2, L). In this case, the circular portion of membrane is removed from the entire thickness of the now membranous atresia. Here the tubing can be placed directly through the nose. Since the posterior nares is two and a half times as large as the anterior nares, the diameter of the tubing used should be at least twice the size of the opening of the anterior nares. The tubing should extend only a short distance beyond the atresial opening. It is held in place anteriorly by catching it under the tip of the nose. The presence of the rubber tubing in the nose does several things: it exerts pressure against the replaced elevated nasal mucous membrane on the floor of the nose, nasoantral wall and septum, eliminating the possibility of any dead space; it prevents the formation of a hematoma and minimizes any postoperative bleeding. The rubber tubing is removed from five days to one week after the operation, and no further treatment is necessary. The previously fractured inferior turbinate returns to its normal position after the tubing is removed. A submucous resection can be performed at the same time, if the septum is obstructing in any way. If the atresia is bilateral, both sides can be operated upon at the same time.

In cases of asphyxia in the newborn due to the presence of a bilateral atresia of the posterior nares, treatment must be instituted promptly at birth.[6] The infant's mouth should immediately be opened, and it should be kept open by placing an anesthetist's metal airway in it. An adequate supply of air is thus maintained until a nasal airway can be established. This is a lifesaving measure. The metal airway should be retained in the mouth before, during and after surgical intervention. Tracheotomy should be performed at once if the airway in the mouth should appear inadequate. Obviously, mechanical respirators are of no value if the nasal airway is closed by a bilateral atresia of the posterior nares.

The operative procedure in the newborn need not be performed in the operating room. It can be carried out in the nursery, with the infant mummified. Topical anesthesia is sufficient. After aspirating the mucus in the nose, cotton pledgets moistened with equal parts of Pontocaine®, 1 per cent, and Neo-Synephrine®, 0.5 per cent, solutions are placed in each nostril. A no. 1 Lempert-type mastoid curet is passed into the nose until it reaches the atresial obstruction. A narrow strip of adhesive is then wrapped around the shank of the curet at the point where it meets the rim of the nostril. The adhesive serves as a mark by which one may note the progress of the curet passing through the atresia. With firm pressure exerted against the bony obstruction, beginning on the floor of the nose, the curet is rotated from side to side until the bone is perforated. All this manipulation is done through the sense of touch. The bony perforation is enlarged to a point at which the curet is felt to be flush with the floor of the nose, septum, roof and lateral wall of the posterior choana. The entire bony portion of the atresia can then be assumed to be completely eliminated. The nasal mucous membrane in front of the atresia must be sacrificed while removing the bone. Any bony spicules are removed by irrigation with normal saline solution and suction. Even though the bony atresia has been completely eliminated, the opening into the nasopharynx may still be closed. This closure may be due to the fact that the thick resistant pharyngeal mucous membrane which covers the bone on its posterior surface is still present and intact

because it was not perforated by the curet when the bony portion of the atresia was removed. To complete the opening, a crucial incision is made in the pharyngeal mucous membrane, using a no. 11 Bard-Parker blade on a no. 7 handle, passed through the nose. When incising the membrane, the posterior pharyngeal wall must be protected from injury by keeping the finger in the nasopharynx. The finger at the same time acts as a guide to the advancement of the knife as it is felt cutting through the pharyngeal mucous membrane. The rubber tubing is then passed into the nose, by way of the nasopharynx, using the technique employed when inserting a postnasal pack. The pharyngeal mucous membrane is thereby brought forward into the nose and serves as a lining for the bare bony rim of the newly created opening, by healing together with any torn remnants of the nasal mucous membrane in front. It is thus prevented from closing. The tubing should not be more than 1½ inches long and only as large as the anterior nares. It is held in place anteriorly by catching it under the tip of the nose. After two or three weeks, it is removed. The same technique is followed in the case of the young child, except that he is placed under general anesthesia.[6]

In closing, I wish to leave this thought with you. There is a definite relationship between atresia of the posterior nares and infant suffocation. If an infant cannot breathe through its nose because of a bilateral atresia, it normally will not open its mouth to breathe and therefore will suffocate.[3,6,9] The unexplained cases of suffocation in infants up to 5 months of age, who are found dead in their cribs or carriages, may very well be due to an unrecognized unilateral atresia, for when the clear nostril is accidentally closed, the child suffocates. Unilateral atresia of the posterior nares may be the cause of death in those cases reported at autopsy as "Cause Unknown."

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DISCUSSION

MATTHEW S. ERSNER, M.D., Philadelphia: The incidence of bilateral choanal obstruction is about one in a million; unilateral choanal obstruction occurs in about one person in 60,000. In my forty years' experience, I have been fortunate to encounter six bilateral and eight unilateral choanal obstructions. Of these, eight were osseous and six were membranocartilaginous.

I would like to emphasize Dr. Beinfeld's point that a so-called blue baby does not

always have a cardiac defect. One must determine whether the anoxia is due to choanal obstruction or to a congenital cardiac condition. It is our duty to call to the attention of the obstetricians and pediatricians the fact that they should open the mouth of every cyanotic baby and insert a vent to promote breathing. When the anoxia is due to a choanal obstruction, the cyanosis disappears and normal color returns to the face. When the condition is of cardiac origin, the child will remain cyanotic. This procedure is often neglected, and many a blue baby succumbs because of nasal and choanal obstruction rather than of congenital cardiac failure.

I would propose that in these cases an air vent be inserted and that trained nurses be kept on 24-hour duty lest the vent slip out, thus causing death. If you can keep the child breathing for three or four weeks, he will learn how to breathe through his mouth and survive. The other problem is feeding, and only minute quantities of food—administered either by a medicine dropper or by a bottle—should be fed; otherwse, suffocation may ensue because of the infant's inability to breathe through his nose.

One of the most important symptoms, which can be readily observed, is that when the child's head is bent forward, a gelatinous mucoid secretion pours out. The child is unable either to blow or to aspirate the secretions, but by tilting the head forward, these secretions will be evacuated by the force of gravity. Otherwise, suction must be employed.

The following is the operative procedure for bilateral choanal obstruction: The nose is packed with 1:15,000 epinephrine hydrochloride bilaterally. After ten minutes the packing is removed. The inferior turbinates are infracted upward, laterally and bilaterally, with a Killian speculum. A Doyen-Jansen side mouth gag is then inserted. A crisscross incision is made with a sharp bistoury having a long thin handle. Then with a Freer elevator and/or a Cottle elevator, the mucous membrane of the bony portion of the obstruction is elevated upward, downward and laterally, thus exposing the bony obstruction. The left index finger of the surgeon is inserted through the mouth and into the epipharynx in order to palpate and to guide the movement of a dental bur. With the right hand, a long sharp five-pointed bur attached to a dental engine is inserted into the right side of the nose, and the osseous obstruction is perforated. The remainder of the bone is removed with biting forceps, and the sharp bony edges are smoothed with the bur, which is constantly guided in the epipharynx by the left index finger. The procedure is repeated on the left side. The crisscrossed mucous membrane is pushed backward to cover the raw, exposed bony surface. To keep the mucous membrane in place and to prevent atresia, a no. 26 French rubber catheter is inserted in the choanae in the following manner: Two soft no. 9 French rubber catheters are passed through the nares into the pharynx to act as pilots. The distal ends of the catheters are grasped with a Kelly hemostat in the oropharynx and are brought out through the mouth. (The technique is essentially the same as for a postnasal pack.) One end of the no. 26 French catheter is then sewed and tied to the proximal end of each of the two catheters. The catheters are drawn through the nares, the no. 26 French catheter being pulled through the epipharynx, the oropharynx, and the mouth, and the pilot catheters are removed through the mouth. The two loose ends of the no. 26 French catheter are then sewn together so that the catheter is converted into a rubber "doughnut," which remains in the nose. The catheter resembles the ring worn by the Ubangi tribe.

On the twelfth postoperative day, rotation of the tube is begun to make sure that there are no synechias or adhesions. Three openings are made in the tubing: one posteriorly in the region of the epipharynx, and two in the region of the nasal vestibule. Through these openings in the "doughnut" the child is able to breathe through the nose. The patient is sent home with the "doughnut" remaining in the nose to ensure patency of the choanae. The family and patient are instructed to rotate the tubing several times daily.

In a month the patient is readmitted to the hospital and the large catheter (no. 26) is removed and replaced by a smaller (no. 22) French rubber catheter, which is also formed into a "doughnut." At this time, both choanae are inspected. Three openings are again made in the tube, one posteriorly and two anteriorly, so as to facilitate nasal respiration. In two days, the child may be discharged from the hospital and again instructed to rotate the tubing.

In forty-five to fifty days postoperatively, the "doughnut" is removed with the patient in narcosis, and a Sinexon nasal dilator is inserted through both nostrils to ensure patency.

Comment: With this technique, I have had no failures, and permanent patency has resulted. An interesting phase is that the sense of smell returns.

DIAGNOSTIC ASPECTS OF CONGENITAL OSSICULAR FIXATION

HOWARD P. HOUSE, M.D.
LOS ANGELES, CALIFORNIA

DURING the past decade numerous papers on the subject of congenital atresia or aplasia have been published. The embryology, malformations in the anatomy, and various surgical techniques for the correction of the deformity have been well described. It is the purpose of this presentation not to review again the subject of congenital atresia but rather to discuss the diagnostic aspects of minor congenital deformities which may be present in the ossicular chain without evidence of abnormalities in the ear canal or ear drum (fig. 1). This can best be presented by reporting three such cases which were encountered and recognized out of a rather large series of patients operated upon for hearing impairment.

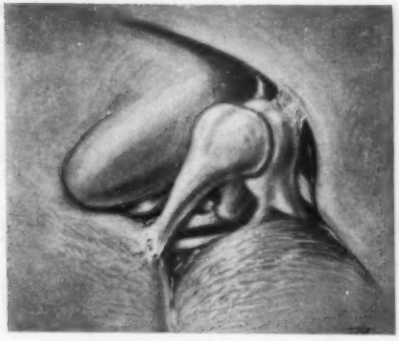

FIG. 1—The area of fixation of the incus in the incudo fossa, and the head of the malleus.

From the Department of Otolaryngology, University of Southern California School of Medicine, Los Angeles.

Presented at the *Special Program* of the Otosclerosis Study Group and the Committee on Conservation of Hearing, Oct. 9, 1955, Chicago.

CASE REPORTS

Case 1

Miss J. K., age 19, consulted me in April 1951 regarding a unilateral hearing loss which had been discovered accidently by her eleven years previously. The hearing loss had not progressed, according to the patient and her parents. Accounts of hearing impairment in other members of the family were contained in the family history.

Examination failed to reveal any evidence of local ear disease to account for the hearing impairment of the patient. Audiometric studies revealed normal hearing in the left ear and a conductive impairment of 45 decibels in the right ear. The conductive curve was entirely flat throughout all the frequencies, as was the bone conduction curve.*

A diagnosis of unilateral clinical otosclerosis was established. Since the young lady was planning to become a school teacher, it was deemed advisable by her parents to attempt surgical correction by means of a fenestration operation.

In June 1951, a right endaural approach was made, and the short crus of the incus was found to be solidly fused to the annular ring and to the incudal fossa.

Further bone was carefully removed from over the epitympanum, and although the incus appeared normal, it was solidly fused to the malleus at the incudomalleal joint area. The bridge of the annulus was removed, freeing the short crus of the incus. This maneuver immediately allowed the incus and malleus to become mobile even though the joint was fused. Examination of the stapes revealed it to be freely movable. The endaural incision was closed without the creation of a tympanomeatal membrane.

Ten days after surgery the first audiogram revealed a 7-decibel loss for a gain of 38 decibels in the three speech frequencies (fig. 2). One month later the hearing receded to a 15-decibel average loss, and six months later another audiogram revealed further regression of the hearing to a 20-decibel average loss. This level has been maintained to date.

*In all of the figures presented, the bone conduction curve for the affected ear is at the top of the graph.

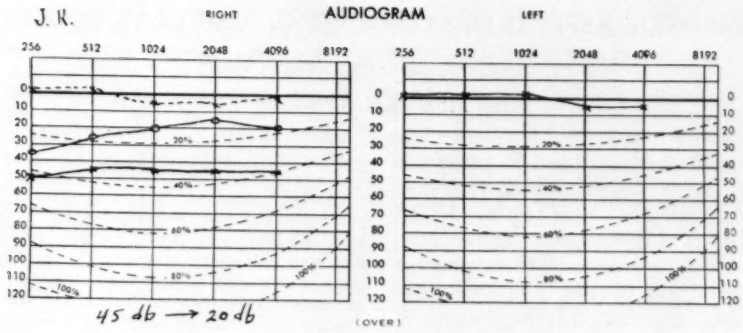

FIGURE 2.

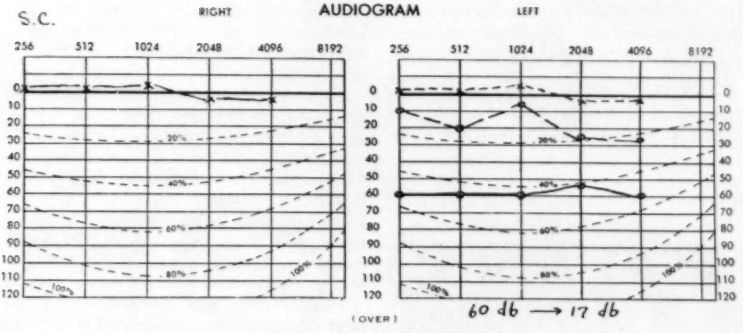

FIGURE 3.

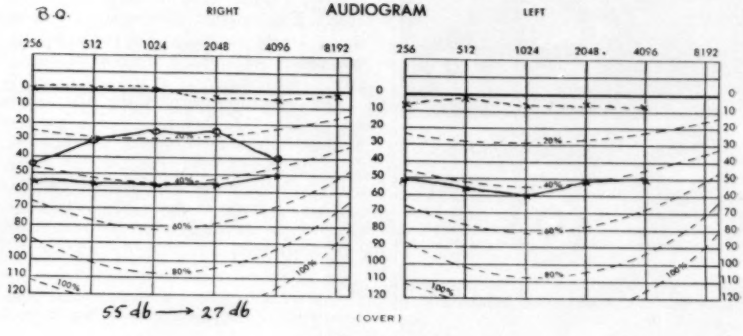

FIGURE 4.

Case 2

Mr. S. C., age 18, consulted me on November 5, 1954, regarding a unilateral hearing impairment which the patient and his family first recognized when the boy was ten years of age. Subsequent hearing tests failed to reveal any evidence of progression, and the young man and his parents stated they had not been aware of any progression of his hearing impairment. The boy had had the usual childhood diseases, but he had never had otitis media.

Examination failed to reveal any local evidence of ear disease to account for the patient's hearing loss. Audiometric studies revealed normal hearing in the right ear and a flat 60-decibel loss by air conduction in the left ear, with a normal bone conduction curve.

Inasmuch as this boy was interested in entering the Air Force, an exploratory procedure was suggested in the hope that a minor congenital ossicular fixation might be found which could be remedied in a manner similar to that used in Case 1. In December 1954 an endaural approach was made, and again the short crus of the incus was found to be atrophic and solidly fixed to the annulus and to the incudo fossa. The crus was carefully separated from the annulus and the fossa, but in so doing the incudostapedial joint was accidently dislocated. This joint was replaced in an approximated position and the wound was again closed tightly without the creation of a tympanomeatal membrane.

The audiogram two weeks later revealed the hearing had improved from a 60-decibel loss to a 22-decibel loss for the three speech frequencies (fig. 3). A subsequent test made six weeks following surgery revealed a slightly improved average of 17 decibels for the three speech frequencies. This gain has been maintained since that date.

Case 3

B. O., age 8 years, first was brought to me for consultation on July 6, 1955, regarding a hearing impairment which was noted by his parents when he was three years of age. At that time the boy was very slow in speech development; this led to an examination at a University clinic, where a hearing impairment was confirmed. Since that time numerous audiograms had been made which failed to reveal any progression. There was no family history of deafness, and the past history of the child was irrelevant.

Examination of the ears failed to reveal any local evidence of disease. Audiometric studies revealed a bilateral conduction-type of hearing impairment with a flat nerve curve across the zero line and a flat air-conduction curve at 55 decibels.

Again an exploratory procedure was suggested, and an endaural approach was made in July 1955. The short crus of the incus was found to be fixed in the incudo fossa area without fusion to the annulus. The crus was carefully freed from the surrounding bone. It was noted, however, that there was still not the usual mobility of the incus and incudomalleal joint, and further exposure of the epitympanum revealed that the anterior portion of the malleus head was fused to the bone of the anterior portion of the epitympanum. This was carefully freed by means of a small cutting bur. Careful examination of the stapes, however, revealed complete fixation with atrophy of the stapes and stapedius tendon. In view of this fixation, the incus and the head and neck of the malleus were removed in the usual manner. A closer examination of the footplate area revealed a firm bone which could not be recognized as a normal or otosclerotic footplate. It was concluded at the time of surgery that this case represented a congenital deformity, not only of the short crus in the incus and the head of the malleus, but also in the region of the stapes footplate. A fenestration was carried out, and a tympanomeatal flap was turned in the usual manner.

Audiometric studies revealed a preoperative level of 55 decibels loss for the three speech frequencies, which improved to a postoperative level of 27 decibels loss which has been maintained to date (fig. 4).

SUMMARY

These three cases serve to call attention to minor congenital abnormalities which may involve the ossicular chain and which closely resemble clinical otosclerosis. The differentiating factors include (1) the marked conductive loss in early childhood, which is greater than could be due to any other acquired pathologic process; (2) the lack of progression of the hearing impairment, and (3) the rather typical audiometric findings of a flat air-conduction loss at the 50-decibel or 60-decibel level, associated with a flat bone curve approximating the zero level.

If partial fixation is present, the conductive loss is of less magnitude. I believe it well worth while to report these cases in the hope that others may recognize these minute areas of fixation in the ossicular chain and thereby possibly avoid the necessity of fenestration, unless the footplate is actually involved, as it was in the third case of this series.

The surgical approach used in stapes mobilization is an ideal means of exploring the middle ear cavity when such congenital deformities are suspected.

DISCUSSION

ROBERT HENNER, M.D., Chicago: It was very gratifying to me to hear this paper because, to my knowledge, this is the first otologic reference to a minor congenital ossicular anomaly that shows some future towards rehabilitation of the hearing.

In our own experience at the Illinois Eye and Ear Infirmary, we now have five such cases, four of which have been operated upon and proved to have minor ossicular variations. We have never seen an incus frozen to an annulus. We have seen, for the most part, congenital synostosis or synchondrosis between the incus and the malleus, and we are performing an atticotomy type of procedure, which is shortly to be reported. I think that these anomalies are not quite as rare as Dr. House indicated. Our first attention was drawn to this anomaly in a case of a patient with congenital atresia, who also had a congenital deafness in the opposite ear. This deafness was of a conductive nature, but the drum and canal were visible. We have observed that usually the minor anomalies of the ear may include some partial stenosis and pallor of the drum, almost avascular, very similar to that seen in an early secretory otitis.

GEORGE E. SHAMBAUGH, JR., M.D., Chicago: A year ago at the meeting of the American Otological Society I discussed a paper on congenital atresia by Dr. Altmann. At that time I reported several of these cases of congenital stapes fixation which we had had in our experience. Most of our cases have occurred in the opposite ear of a patient who had a congenital atresia or absent meatus on one side. The opposite ear had a patent meatus, but operation revealed an anomaly of the ossicular chain. We feel that when a patient comes to us with a bilateral conductive loss and atresia on one side, on the other side we can expect to find an anomaly of the ossicular chain.

In the most interesting and the most recent case of this sort which we operated upon, the patient proved to have a perfectly normal malleus, incus, and stapes except that the long process of the incus ended short of the stapes. There was a space, so there could be no joint between the incus and the stapes. In this case we laid a flap against the malleus and incus, touching the stapes, and we gained a hearing improvement of about a 15-decibel level, which we felt was better than we could have gotten by a fenestration.

I would agree with Dr. House that if you can avoid a fenestration in these cases, it is advantageous.

FACTORS INFLUENCING THE BLOOD VOLUME OF THE CHOROID AND RETINA

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VICTOR G. FELLOWS, M.D.
SAN FRANCISCO, CALIFORNIA

THE clinical importance of the choroidal vascular bed in sustaining retinal function is axiomatic. Many disorders of the retina and choroid have been known to be, or presumed to be, due to impaired blood supply. For decades, numerous drugs have been used in an attempt to increase the blood supply of the choroid and retina. In many instances these drugs are completely without effect; in other instances they may actually decrease the intraocular blood volume secondary to dilatation of the peripheral vascular bed elsewhere in the body.

Until recently there has been no good method available with which to evaluate the effect of drugs on the choroidal blood volume.

The study of factors influencing the blood supply of the retina or choroid has been the subject of a large number of clinical and experimental investigations. The following outline presents a summary of these investigations:

I. Techniques Dependent on Direct Observation of the Vessels of the Retina or Choroid

A. Ophthalmoscopic observation, with or without a grid[12]

Comment: This method has been totally unsatisfactory. It is difficult, if not impossible, to maintain fixation upon a given segment of a vessel for a long period of time. The changes in size are usually too subtle to be detected by direct observation. Varying degrees of astigmatism and aberrations in different sections of the cornea may cause apparent variations in size more marked than those caused by actual alterations in the caliber of the blood vessels.

Even if this method were effective, it would only indicate changes in vessels subject to direct observation and would give little information on the total blood volume of the choroid and retina.

B. Photography with a fundus camera[13,17]

Comment: If fundus photographs are examined with a dissecting microscope with a scale in the ocular, some consistent changes can be noted after the subject has breathed pure oxygen.[9] This method permits only comparison of given areas of isolated vessels, and much variation in these individual vessels has been found.[20] Other objections to the method are changes in size of the vessels with variations in the pulse phase, variations in the state of focus, distortion at the periphery of the field, and interference due to motion of the patient or animal.

C. Photography of the retinal vessels using a Leitz ultropak microscope and a Koeppe contact lens

Comment: This method is subject to most of the objections noted under B (*vide supra*).

D. The scleral-window technique of Leopold

Comment: This interesting and ingenious method provides direct observations, under a microscope, of the choroidal blood vessels through a scleral window,[14] but only the larger choroidal vessels can be studied. In all of their thorough and ex-

From the Division of Ophthalmology, Department of Surgery, Stanford University Medical School.

This study was supported by Research Grant PHS B-687, Department of Health, Education and Welfare.

Presented at the Sixty-First Annual Session of the American Academy of Ophthalmology and Otolaryngology, Oct. 14-19, 1956, Chicago.

tensive investigations, Leopold and his coworkers were unable to demonstrate dilatation of the choroidal blood vessels by any drug.[21] They state that this could be due to experimental conditions (proptosis of the eye, dehydration of the sclera, trauma from insertion of plastic disc in suprachoroidal space, etc.); or that the absence of response to this type of drug could be due to maximal dilatation that existed from the beginning of the studies.[22]

II. Techniques Dependent Upon Secondary Physiologic Effects Resulting from Changes in Vascularity

A. Electroretinography

Comment: Circulatory disturbances in the retina produce variations in the electrical response, and the shape of the electroretinogram varies in part with alterations in the blood supply.[7,11] The reliability of this technique for the study of the action of vasodilator drugs has not been established. Henkes rarely uses electroretinography for this purpose because of inconsistent results.[8] Hellstrom[6] and Jacobson and Lincoln[10] found the results variable and the evaluation difficult.

B. Studies of the flicker fusion frequency

Comment: This technique was used by Scher and Spankus[19] to evaluate vasodilators. The results were not striking.

C. Angioscotometry

Comment: The effect, if any, is a secondary one and provides an indirect measure of the retinal blood vessels, and *only* the retinal blood vessels.

D. Intraocular pressure

Comment: The correlation of vascular events within the eye with changes in the intraocular pressure is very difficult to achieve since many other influences must be eliminated.

GENERAL COMMENTS ON METHODS OF STUDYING INTRAOCULAR CIRCULATION

A perusal of the foregoing summary of available methods for the study of the intraocular circulation discloses only one technique which readily lends itself to the study of the choroidal blood supply: the scleral window technique of Leopold. This technique failed to reveal any drug or agent which increased the diameter of the choroidal vessels.

A new technique which the present authors have previously described,[2] is the only one that permits the study of changes in the total blood volume of the choroid and retina. The associated experimental trauma is minimal.

In brief, this technique, adapted from Berson and Yalow,[1] is as follows: Radioactive phosphorus (P^{32}) is incubated with 10 cc. of blood previously withdrawn from an experimental animal. This causes the P^{32} to enter into the red blood cells, where it is confined for a number of hours. The red cells are then centrifuged, washed three times, resuspended in saline, and reinjected into the animal. Thus, any P^{32} that did not enter the red cells is washed away. All of this radioactivity is contained in the red blood cells, which, in turn, are confined to the vascular tree. As the P^{32} is equally distributed throughout the vascular tree in a very short time, an increase in radioactivity means that a greater volume of blood is present under the counting tube. A decrease in radioactivity indicates the reverse.

The basis of this technique is demonstrated in the accompanying illustrations. If the P^{32} is not incubated into the red cells, it soon diffuses out of the blood vessel (fig. 1). However, if the P^{32} is incubated into the red cells, all of the radioactivity is confined within the blood vessel (fig. 2). If a Geiger-Müller tube is placed over the sclera, it detects the radioactivity in the blood vessels immediately below it. P^{32} emits only beta particles, which travel a maximum of 8 mm. through tissue. If the conjunctiva is removed, a Geiger-Müller tube placed over the sclera, posterior to the ora serrata,

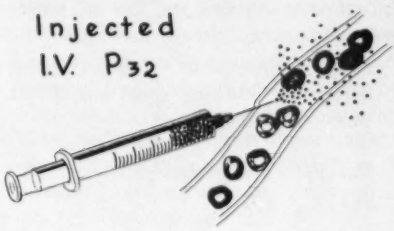

FIGURE 1.

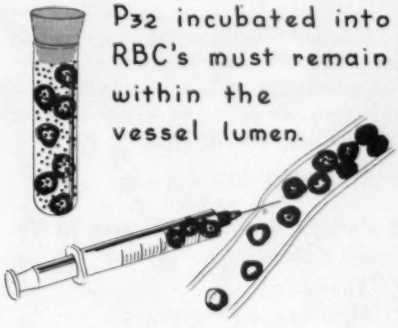

FIGURE 2.

could receive only impulses from the following tissues: the sclera, which contains a negligible volume of blood; the choroid, which contains most of the blood; the retina, with some blood; and the vitreous, which contains no blood (fig. 3). As most of the blood is in the choroid, with some in the retina, the radioactivity is derived from these structures. If the volume of blood in these structures is increased, more radioactivity will be detected by the Geiger-Müller tube (fig. 4).

The technique, therefore, enables the investigator to detect changes in the blood volume of the choroid and retina, and to evaluate agents that may alter the blood volume. It must be emphasized that the technique used here gives no indication of the rate of blood flow but only changes in the volume of blood.

A systematic study of drugs and mechanical agents that might increase the blood volume of the choroid and retina has been undertaken. It was not considered practical to investigate all drugs and agents that might influence the blood volume, but representatives of most groups of drugs and agents have been investigated. These are indicated in the following outline, which does not include every drug in each group. Drugs listed as "others in this group" were not studied.

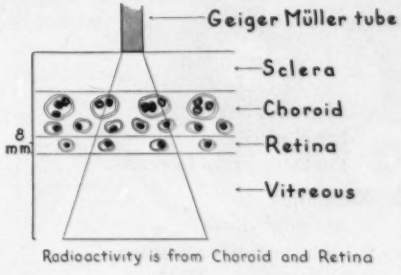

FIGURE 3.

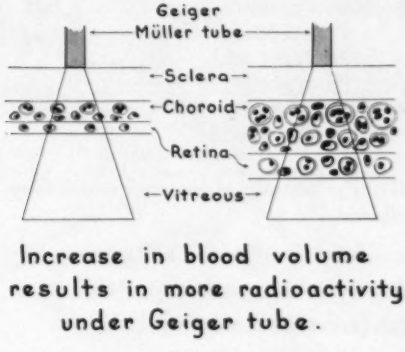

FIGURE 4.

GROUPS OF DRUGS AND AGENTS UNDER STUDY FOR POSSIBLE VASODILATING ACTION OF CHOROIDAL AND RETINAL VESSELS

A. Direct Depressants of Vascular Smooth Muscle

1. Nitrites
   a. Amyl nitrite
   b. Sodium nitrite
   c. Others in this group
      Glyceryl trinitrate
      Erythrityl tetranitrate
      Mannitol hexanitrate
      Ethyl nitrite
      Pentaerythritol tetranitrate
2. Xanthines
   a. Aminophylline
   b. Others in this group
      Caffeine
      Theophylline
      Theobromine
3. Miscellaneous
   a. Papaverine
   b. Nicotinic acid
   c. Histamine
   d. Procaine
   e. Carbon dioxide

B. *Peripheral Adrenergic Blocking Agents*

1. Tolazoline (Priscoline®)
2. Phentolamine (Regitine®)
3. Benzodioxane
4. Others in this group
   a. Yohimbine
   b. Azapeline (Ildar®)
5. Dibenamine, dibenzyline, and related compounds

C. *Autonomic Ganglion Blocking Agents*

1. Nicotine
2. Hexamethonium
3. Others in this group
   a. Tetraethylammonium
   b. Pentamethonium

D. Centrally Acting Sympathetic Inhibitors

1. Dihydroergotamine (also peripheral adrenergic blocking agent and direct vasoconstrictor)

E. Parasympathomimetic Drugs

1. Choline esters
   a. Acetylcholine
   b. Methacholine (Mecholyl®)
   c. Others in this group
      Carbachol
      Bethanechol
2. Cholinesterase inhibitors
   a. Di-isopropyl fluorophosphate (DFP)
   b. Others in this group
      Physostigmine
      Neostigmine

F. Sympathomimetic Drug

1. Epinephrine

G. *Antihypertensives with Mixed or Unknown Actions*

1. Thiocyanates
2. Hydralazine (Apresoline®)
3. Rauwolfia serpentina
4. Veratrum

H. Mechanical or Surgical Procedures

1. Paracentesis of anterior chamber
2. Compression of jugular veins
3. Exhalation against pressure
4. Cervical sympathectomy
5. Cold to extremities
6. Heat and cold locally

I. Tobacco Smoke

The experimental animals used in all but the earliest experiments were cats. It was felt that these animals exhibited an intraocular circulation, carotid-sinus reflex, and other features more similar to those of man than did rabbits or other experimental animals readily available.[15] A total of 170 animals was used.

Drugs which acted peripherally had little effect on the intraocular blood volume when given by systemic administration, but they had a marked effect when administered by retrobulbar injection. These included the direct depressants of vascular smooth muscle, under A in the foregoing outline, and the peripheral adrenergic blocking agents, under B.

DISCUSSION OF EXPERIMENTS

Sodium nitrite administered intravenously produced no change in the intraocular blood volume (5 animals). Amyl nitrate pearls given by inhalation resulted in an immediate decrease in blood volume followed by a transient increase (5 animals) (fig. 5). This effect was probably a passive result secondary to the opposite effect on the peripheral circulation. It was not sufficiently prolonged, or sufficiently marked, to suggest real clinical value. The nitrites do not lend themselves to retrobulbar administration.

Aminophylline was studied as a representative of the xanthines. When given by intravenous injection (4 animals), almost no effect was obtained (fig. 6). However, when this drug was given by the retrobulbar route (4 animals), a marked and prolonged increase in the intraocular blood volume occurred (fig. 7).

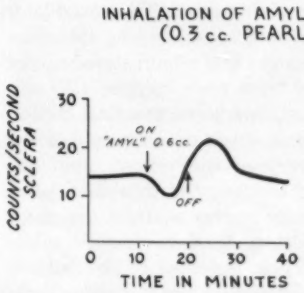

FIG. 5—Inhalation of amyl nitrite caused a transient decrease in blood volume (possibly secondary to dilation elsewhere) followed by a transient increase.

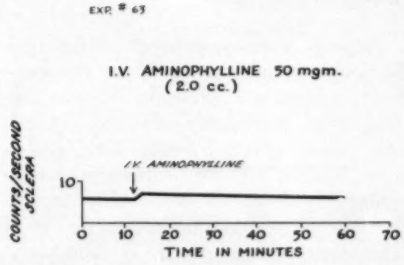

FIG. 6—Aminophylline given intravenously produced no significant effect.

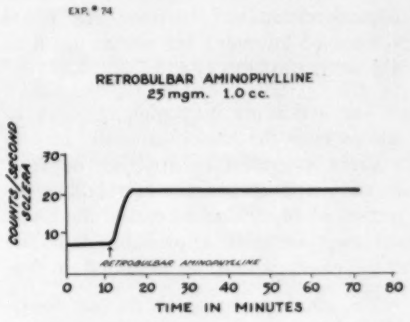

FIG. 7—Aminophylline given by the retrobulbar route produced a marked and prolonged increase in blood volume.

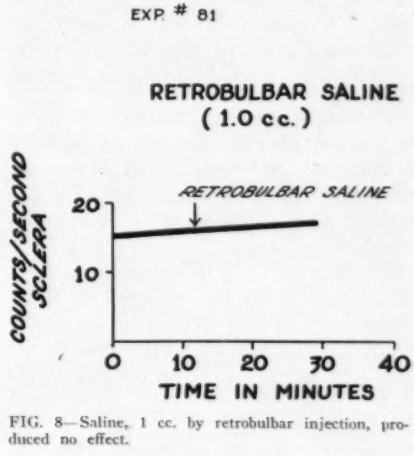

FIG. 8—Saline, 1 cc. by retrobulbar injection, produced no effect.

A control injection of 1 cc. of saline solution given retrobulbarly produced no effect (fig. 8). When a greater volume of saline solution was injected behind the globe, a decrease in the blood volume resulted (fig. 9). This was, in all probability, simply due to mechanical compression of the vessels. The same effect could be obtained by applying pressure to the globe externally (fig. 10).

Among the drugs listed in the miscellaneous group, nicotinic acid was noteworthy in having no effect whatsoever when given intravenously (6 animals) (fig. 11). Nicotinic acid by retrobulbar administration did increase the blood volume (5 animals) but not as much as did aminophylline (fig. 12).

The action of histamine changes as one ascends the zoological scale. In cats a slight arteriolar constriction occurs.* In our experiments, the retrobulbar injection of histamine decreased the blood volume, but it is improbable that the same effect would be obtained in humans.

Procaine by retrobulbar administration produced no effect when given in small doses, for example 0.5 cc. of a 1.0 per cent solution (fig. 13). It produced a definite increase in blood volume when given in large doses, for example 2 cc. of a 2.0 per cent solution (fig. 14).

Carbon dioxide was one of the best vasodilators we encountered. When administered in a concentration of 8 per cent or 10 per cent in air, it produced a marked and consistent effect (fig. 15). The vasodilatation is caused by a local direct action on the vessels.† It is of some interest that oxygen administered in concentrations of 50 per cent to 90 per cent had no effect on the blood volume in the adult animal. The vasodilator effect of carbon dioxide was the same whether this gas was administered mixed with air or with pure oxygen (20 animals). This is of some practical clinical importance in cases of occlusion of the central artery of the retina. One may wish to administer the combination of these gases in order to attain the vasodilator effect of carbon dioxide while giving oxygen to support the anoxic retina by diffusion from the choroid, as suggested by Patz.[16] It is of importance to know that oxygen does not constrict the adult vessels or diminish the effect of carbon dioxide.

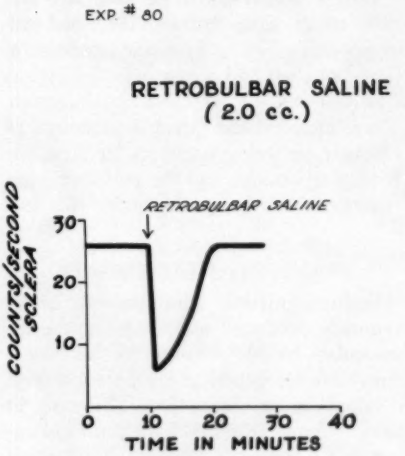

FIG. 9—Saline, 2 cc. by retrobulbar injection, produced a decrease in blood volume.

Among the peripheral adrenergic blocking agents (group B in the outline), tolazoline (Priscoline®) was the drug most thoroughly studied. Tolazoline, when given by the intravenous route, caused a slight decrease in intraocular blood volume (probably secondary to peripheral dilatation (fig. 16). The same drug given retrobulbarly caused a definite increase in blood volume (fig. 17).

* Page 645 of Goodman and Gilman.[5]
† Page 918 of Goodman and Gilman.[5]

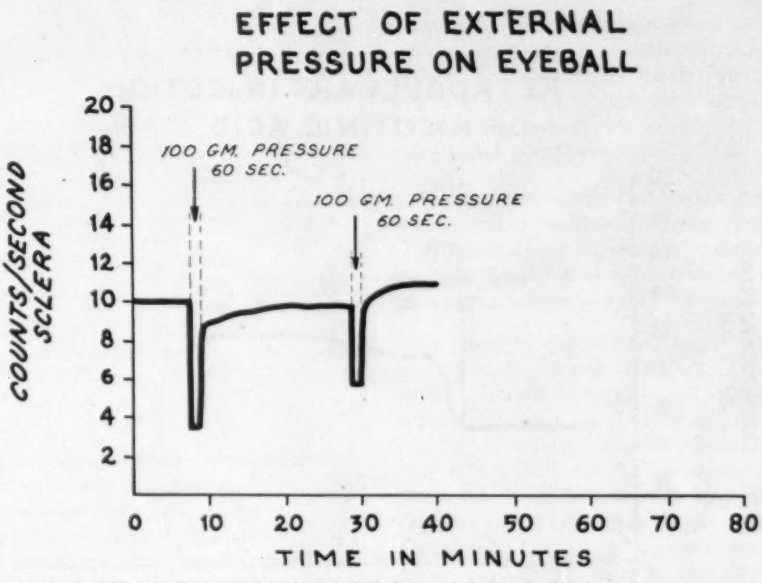

FIG. 10—Pressure applied to eyeball decreased intraocular blood volume.

The autonomic ganglion blocking agents (group C in the outline) are exemplified by hexamethonium (4 animals). This drug produced no change when given intravenously while the animal was in a horizontal position. When the head was lowered, the intraocular blood volume was increased; when it was raised, the reverse occurred. Nicotine, which may be classified with this group, had better be discussed under the last heading—tobacco smoking.

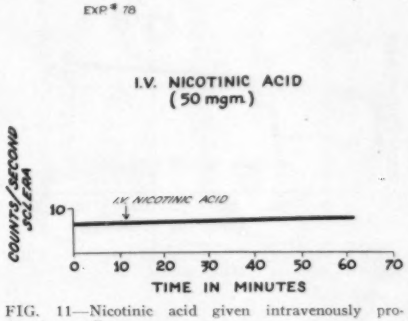

FIG. 11—Nicotinic acid given intravenously produced no effect.

Dihydroergotamine was used as an example of the centrally acting sympathetic inhibitors (group D in the outline). It caused slight decrease in the intraocular blood volume, probably as a result of peripheral vasodilatation (3 animals).

Parasympathomimetic drugs (group E in the outline), exemplified by acetylcholine (4 animals) and methacholine (Mecholyl®) (8 animals) were studied. These drugs, although peripheral vasodilators, resulted in a decrease in the intraocular blood volume both when they were given systemically and when they were given by the retrobulbar route. It is possible that the systemic absorption

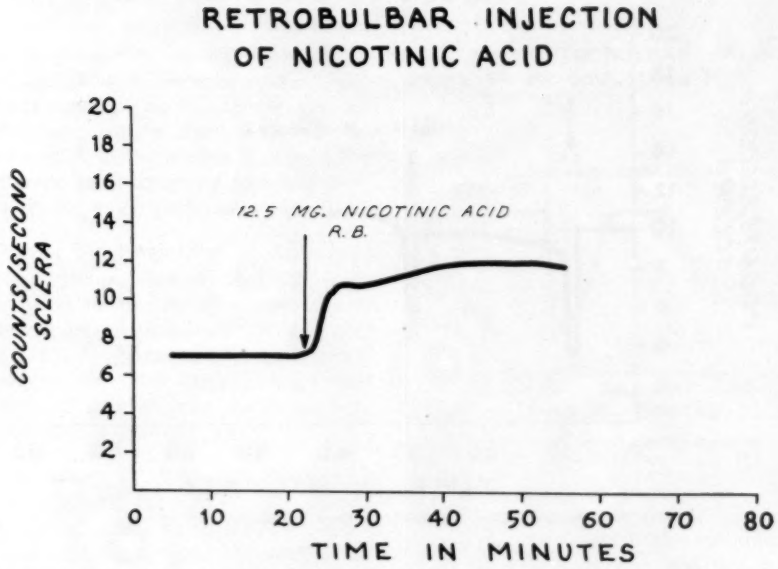

FIG. 12—Nicotinic acid given by retrobulbar injection produced an increase in blood volume.

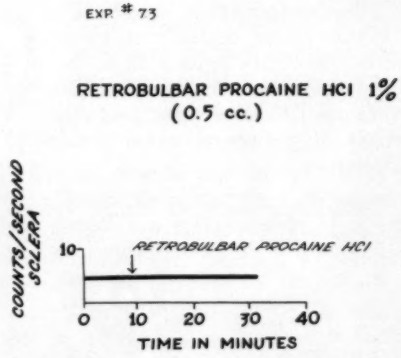

FIG. 13—Retrobulbar procaine in small doses produced no effect.

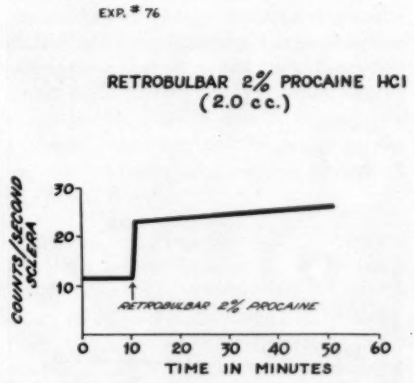

FIG. 14—Retrobulbar procaine in larger doses produced an increase in blood volume.

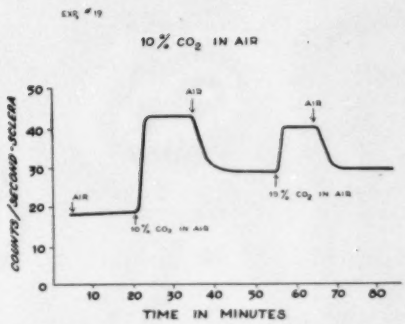

FIG. 15—Carbondioxide produced a definite increase in blood volume.

was sufficiently great after retrobulbar administration that the systemic effect predominated, causing decreased intraocular blood volume. The marked salivation that occurred was a sign of this systemic effect.

The sympathomimetic drug, epinephrine, produced a definite increase in blood volume when given systemically (6 animals) and also when given by the retrobulbar route (6 animals). It is possible that the action of the retrobulbar injection was due to systemic absorption of the drug, which secondarily forced more blood into the eye.

Among the antihypertensive drugs with mixed or unknown actions (group G in the outline), Rauwolfia serpentina was tested and found to be devoid of effect on the intraocular blood volume.

In group H, the effect of paracentesis was of some interest. As might be expected, removal of aqueous resulted in a definite increase in intraocular blood volume. If a large quantity of aqueous (0.8 cc.) was removed, the increase in blood volume persisted for a long while (fig. 18) (3 animals). If a smaller quantity (0.2 cc.) was removed, the increase was of the same magnitude but did not last as long (fig. 19) (3 animals). In order to diminish the magnitude of increase in blood volume, it was necessary to remove the tiniest bit of

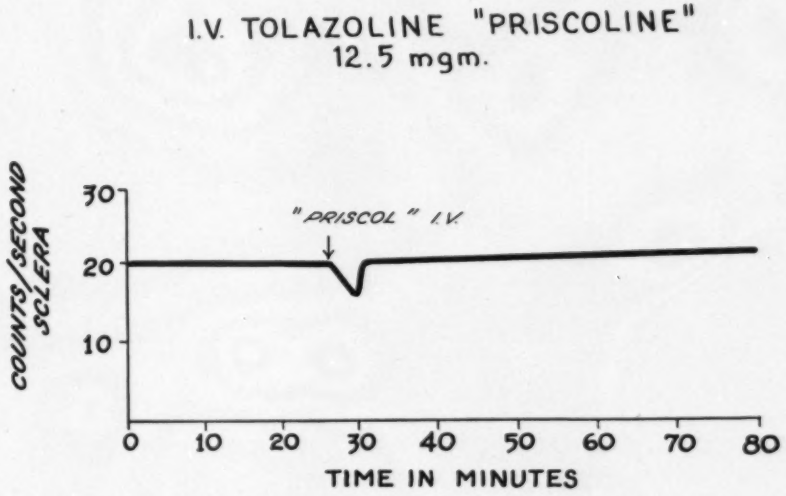

FIG. 16—Intravenous tolazoline produced no significant effect.

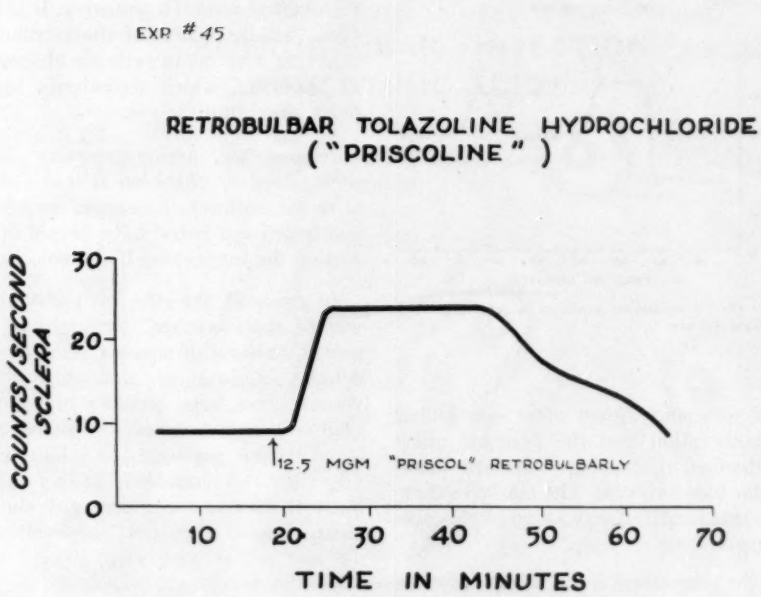

FIG. 17—Retrobulbar tolazoline produced a definite increase in blood volume.

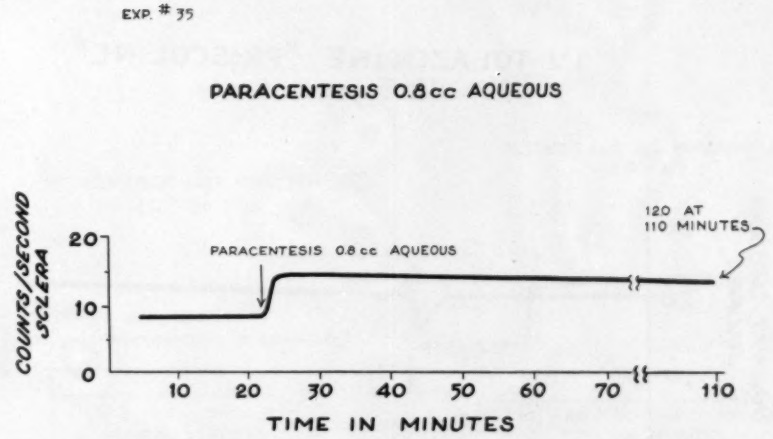

FIG. 18—Paracentesis of a large volume of aqueous produced definite and prolonged increase in blood volume.

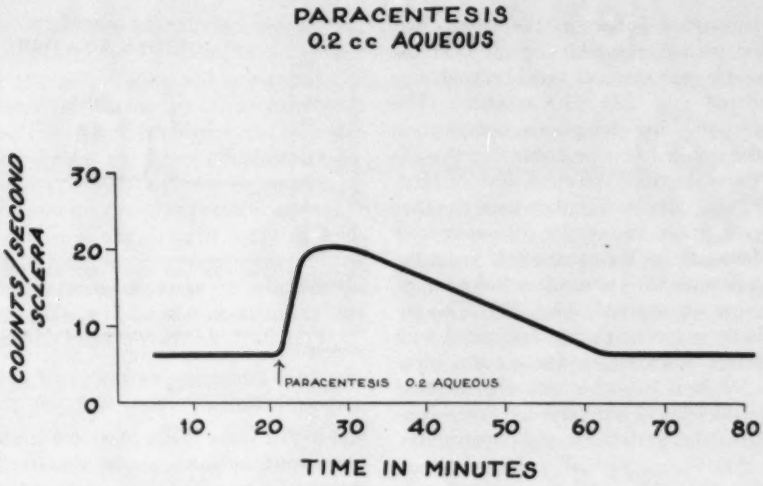

FIG. 19—Paracentesis of a smaller volume of aqueous produced a definite but less prolonged increase in blood volume.

aqueous (estimated 0.05 cc.) (fig. 20) (3 animals). This would suggest that one should drain as much aqueous as possible if one wished to dilate blood vessels and have a prolonged effect, as in treating an occlusion of the retinal artery. The experiments further suggest that decompression of an eye to avoid sudden vasodilatation must be performed with the smallest possible paracentesis—allowing as little aqueous to escape as possible.

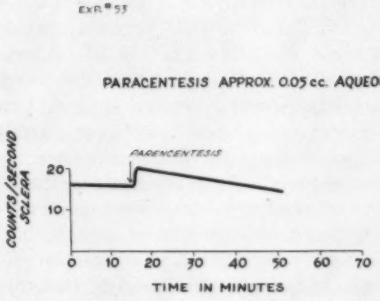

FIG. 20—Paracentesis of a minimal volume of aqueous produced a smaller increase in blood volume.

We were unable to demonstrate that cervical sympathectomy produced any alteration of the intraocular blood volume (4 animals). Local external heat to the eye in the form of hot compresses to almost the entire side of the face likewise had no effect (4 animals). This was also true of cold compresses (4 animals).

The application of ice water to one limb did produce a significant increase in blood volume in the eye in some animals. The susceptibility seemed to vary; three animals showed a very significant increase, and five showed little or no response.

The effect of smoking tobacco (cigarettes) was especially interesting. The cigarette was smoked through the inhalation tube on the breathing machine. If it was smoked very rapidly, a significant

and consistent rise in the intraocular blood volume resulted (fig. 21). If the cigarette was smoked slowly, no change occurred (fig. 22) (10 animals). The rate of smoking changes the composition of the smoke.[3] It is probable that this effect was due to a sufficient dose of nicotine being absorbed rather than to other ingredients in the smoke. We were able to demonstrate the same effect from the intravenous injection of a solution of nicotine (8 animals) (fig. 23). The peripheral vasoconstriction associated with cigarette smoking is due to the nicotine.[4,18] It is probable that the increase in blood volume within the eye is secondary to the peripheral vasoconstriction,

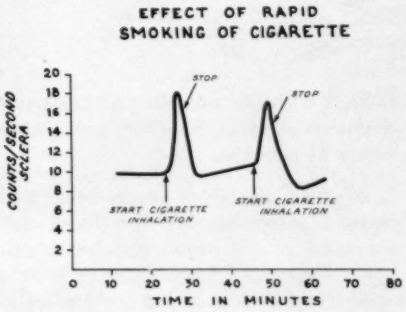

FIG. 21—Very rapid cigarette smoking produced a consistent increase in blood volume.

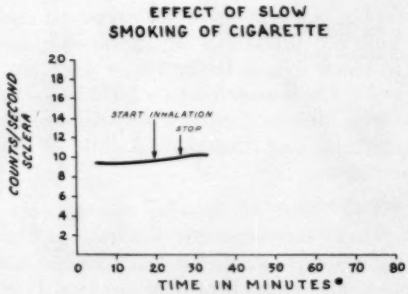

FIG. 22—Slow cigarette smoking produced no change in blood volume.

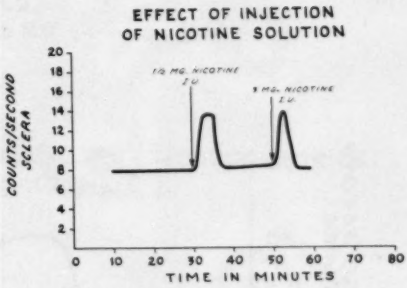

FIG. 23—Intravenous injection of nicotine produced the same increase in blood volume as rapid cigarette smoking.

and in this sense it is a passive dilatation. One must be cautious in transferring these findings from experimental animals to patients because the smoking rate was much more rapid in the experimental setup. However, the possible objection that these animals have not smoked before is probably irrelevant, since it has been demonstrated that acquired tolerance to the vasomotor effect of tobacco does not occur.[22]

It is disappointing to report that the intravenous injection of ethyl alcohol had no effect on the intraocular blood volume (4 animals).

DISCUSSION OF THE EXPERIMENTAL RESULTS

For the first time it is possible to demonstrate definitely that certain agents do increase the choroidal blood volume when they are properly administered. The experimental results suggest that the intraocular blood vessels are capable of primary active dilatation, since increased blood volume results from the local (retrobulbar) administration of certain drugs with peripheral actions, and after the administration of carbon dioxide. It is suggested, however, that this primary active dilatation is weak, and that it may be dominated by the secon-

dary effect resulting from contraction or dilatation of peripheral blood vessels and alterations in blood pressure. The increase or decrease in intraocular blood volume may well be determined by a balance between the direct effect on the intraocular vessels and the secondary effect from the peripheral circulation. The net action of any drug or agent depends on which of these actions predominates. This, in turn, depends on whether the agent acts peripherally or centrally and upon the route of administration.

The foregoing experimental work suggests the following practical classification:

I. Agents with a peripheral action
   A. Drugs that cannot readily be administered locally. These have little effect when given systemically. Example: nitrites.
   B. Drugs that can be administered locally and the action of which is predominantly local. These drugs have a marked effect when administered by retrobulbar injection, but little or none when given systemically. Examples: tolazoline (Priscoline®), aminophylline.
   C. Drugs the action of which seems to be predominantly systemic, even after local administration. These have the opposite effect on the intraocular circulation than their generally accepted one. Examples: epinephrine, Mecholyl.®

II. Agents with little or no peripheral action
   A. Those with no effect. Example: hexamethonium (without tilting).
   B. Those with an effect secondary to systemic effects of the drug. Example: nicotine. Such effects usually preclude clinical use of the drug.

III. Agents which mechanically alter the intraocular blood volume
   A. Pressure—retrobulbar or anterior
   B. Paracentesis

IV. Reflex—cold pressor

The experimental work which we have presented suggests the following practical considerations that might be applied to humans: only carbon dioxide systemically, certain drugs by retrobulbar injection (especially tolazoline and aminophylline), paracentesis, and possibly cold to the extremities are reasonably safe and effective in increasing the intraocular blood volume. Carbon dioxide is most safely administered by rebreathing, preferably through a long tube. Oxygen does not detract from the effect of carbon dioxide, and it probably helps to sustain retinal tissues suffering from anoxia. It would therefore seem wise to administer oxygen concurrently with the rebreathing (through a small side tube). A retrobulbar injection of the drugs mentioned, a large paracentesis, and possibly soaking the arms in ice water may also be indicated.

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DISCUSSION

IRVING H. LEOPOLD, M.D., Philadelphia: The factors which control the ocular circulation or blood volume have been under study for many years. The results have not always been either reproducible or fruitful. Dr. Bettman has reviewed many of these techniques and pointed out a number of their limitations.

One other method might be included in this analysis. Perkins, at the International Congress in New York, reported on a method which inserted a thermocouple through the sclera into the ciliary body. Changes in temperature indicated indirectly alterations in the blood volume in the ciliary body. A rise in temperature indicated more blood, and a drop in temperature a drop in the ocular blood volume in that tissue.

Dr. Bettman and Dr. Fellows, through their well directed imagination, have created a method of measuring ocular blood volume, and this technique does measure changes in ocular blood volume. However, it does not allow one to distinguish between the contribution provided by the retinal vessels and that provided by the choriocapillaris or the main choroidal vessels. Also, if an agent tested produces hemoconcentration, this would bring about an error in the recorded result. It would be important, it seems to me, to determine exactly where this problem applied, for if the problem were applied over the ciliary body region, less of the retinal circulation would be involved. If it were applied posteriorly, more of the retinal circulation would be contributing to the total change in ocular blood volume, which they are attempting to determine.

With this technique they have found that the administration of amyl nitrate, Priscoline,® nicotinic acid, and other agents intravenously failed to cause dilation or to increase the ocular blood volume. These results confirm those which were found by the scleral window and the scleral dehydration technique, showing the uselessness of administering agents like the nitrites, aminophyllin, and Priscoline® intravenously in order to abet the circulation in the eye.

In addition to this they were able to demonstrate that pressure on the globe, sympathectomy, and application of cold, as shown in

the sterile dehydration and sterile window technique, produced the same results.

It might be interesting and rewarding to speculate why these agents produce this change in ocular blood volume. Perkins, in his study, was able to demonstrate that the mechanical irritation of the fifth nerve caused an increase in blood volume of the ciliary body.

Perhaps these agents that Dr. Bettman and Dr. Fellows are testing are producing their effect through pharmacologic action, but it is possible that they may be doing this through simple irritation, and that the normal saline used as control was not irritating enough to bring about the change.

It is also interesting to guess why carbon dioxide might be increasing the ocular blood volume. Perhaps it acts by producing splanchnic area vasoconstriction and thus increasing, passively, the blood entering into the ocular circulation, as has been demonsrtated in the cerebral circulation.

The retrobulbar injection of Priscoline,® as demonstrated experimentally by Bettman and Fellows, confirms the clinical impression which has been apparent and reported by many European ophthalmologists for the past ten years regarding the value of retrobulbar Priscoline® for the therapy of central artery inclusion. There is no doubt that this method measures changes in ocular blood volume. Whether the change is due to the retinal circulation or to the choriocapillaris or to the main choroidal vessels remains to be determined, and when this method is employed with other techniques that are available, much useful information should be available.

ARNALL PATZ, M.D., Baltimore: Drs. Bettman and Fellows are to be congratulated on their excellent paper. This work represents an important contribution to basic ocular physiology and gives us an accurate, yet reasonably simple, technique for estimating choroidal and retinal blood volume.

I was especially interested in their observation that oxygen inhalation in the adult animal did not alter the ocular blood volume, for in selected cases of retinal arterial occlusion seen very early after onset, oxygen inhalation exerted a temporary beneficial effect on retinal function, as indicated by visual fields and acuity examinations. In animal studies, oxygen inhalation administered within minutes after experimental section of the retinal vessels delayed the onset of retinal degenerative changes, apparently by increasing diffusion of oxygen from the intact choroidal blood supply. The observation of Bettman and Fellows that 5 per cent carbon dioxide and 95 per cent oxygen caused an increased blood volume is of clinical importance in these cases.

I would like to suggest that, for a future experiment, the authors consider making measurements to determine the blood volume of the choroid and of the retina separately. In our experiments, we have removed the lateral wall of the orbit, thus exposing the optic nerve area in the cat. Following this operation, a cautery tip was placed at the entrance of the central retinal vessels into the nerve. Using the authors' technique, the combined blood volume of retina and choroid would be measured first, then the current would be applied to coagulate the central retinal vessels. The choroidal blood volume would remain, and the difference between this and the total would represent the retinal blood volume.

DR. BETTMAN: I should like to thank the discussants for bringing up some very interesting points, for making some good suggestions, and for their time.

The question was raised whether the total blood volume was mostly retinal or choroidal. In a different experiment, which will be reported at some future date, we have injected neoprene into the eye, at the suggestion of Dr. Maumenee, separated the choroid and retina, digested the tissue, weighed the neoprene in each separtely, and found that in cats the volume of retinal blood supply by this method was only 3 to 4 per cent that of the choroidal blood supply.

Dr. Leopold mentioned the interesting speculation that retrobulbar injection of drugs might increase the blood volume because of the irritation of the drug. I suppose there is no mistake about the fact that irritants do tend to dilate the blood vessels. However, in addition to Priscoline, we have injected retrobulbarly at different times, Acetylcholine Mecholyl, and histamine, and they all produced a decrease in the blood volume. I would suggest that these drugs are as irritating as the ones that produced a dilation of the blood vessels.

We have not used the thermocouple technique because we thought it would tend to upset the physiology of the eye. The counting probe was back of the ora serrata over the retina and choroid.

USE OF THE HARRINGTON MULTIPLE-PATTERN FIELD SCREENER IN INDUSTRY

LOGAN T. ROBERTSON, M.D.
ASHEVILLE, NORTH CAROLINA

DURING the past twelve months we have used the Harrington Multiple-Pattern Field Screener[1] as part of a periodic health examination program carried out in seven different industrial plants. Examinations were offered to all employees in these plants on a voluntary basis. Participation averaged 90 per cent. The seven plants included one North Carolina plant (2191 examined) and six Ohio plants of one corporation engaged in various aspects of manufacturing (range 153 to 2059 examinees). The population tested included many educational and skill levels, ranging from unskilled labor to top managerial and professional research personnel.

The examinations were performed in mobile medical units brought to the plant site and were part of comprehensive screening tests, which included general physical examination, chest x-ray, electrocardiogram, blood tests (hematocrit, serology, blood sugar), urinalysis, audiogram, visual screening tests (Ortho-Rater testing of near and far acuity, color perception, depth perception, phorias). The Multiple-Pattern Field Screener portion of the examination took approximately two to five minutes of the allotted hour and a half of examination time.

The test result of visual fields screening were first coded as either normal or abnormal, with abnormalcy defined as the examinee's failure to recognize any symbol or symbols on the test cards other than that failure attributable to the blind spots.

The results from the examinations in the group of six Ohio plants will first be described. The Field Screener test was taken by a total of 5,630 individuals from this group of plants. Of these, 258 (3.8 per cent) were recorded as abnormal. On reviewing the clinical records, however, it was immediately apparent that 43 of the coded abnormalities were explained by such conditions as corneal scarring and ulcers, lenticular opacities, and gross extraocular muscle imbalances. Correcting the gross number of abnormalities to exclude these 43, left us with a net yield of 215 cases, or 3.8 per cent. These 215 cases were then further analyzed as to the relationship between age and sex of examinee and the type of abnormality.

Marked differences in the percentage of abnormalities for different age groups were found as well as differences by sex. In table I the incidence of abnormalities by age groups is shown for males and females. It will be noted that, in general, the incidence of abnormality for the men was twice as great as that found for the women. In addition, for each sex there is a marked increase in yield with increasing age, the yield being five to seven times greater in the older than in the younger population. These differences by sex and age were subjected to a chi square analysis and were found to be significant at the 1 per cent level, increasing the confidence that the cause of

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difference is very probably more than chance. Further analysis of the test results showed that 25 per cent of the men and 14 per cent of the women showed recognizable "pattern" abnormalities. A listing of the "patterns" identified includes (1) superior quadrant defect, (2) concentric narrowing of field, (3) central visual defect, (4) nasal quadrant defect, (5) left homonymous hemianopsia, and (6) enlarged blind spot. Table II gives the distribution of abnormalities falling into the "pattern" group for each sex. As a further breakdown, the number of bilateral and unilateral abnormalities occurring in patients with a recognizable pattern and in those without recognizable patterns is also presented. In table III it will be seen that the incidence of bilateral abnormality was considerably higher in the "pattern" group: 60 per cent as compared with 19 per cent for the men, and 43 per cent versus 20 per cent for the women. This greater degree of bilaterality among the abnormalities fitting a recognizable "pattern" as compared to those with no recognizable pattern was also statistically significant at the 1 per cent level. There was no statistically significant difference in the incidence of patterns by unilateral versus bilateral distribution (of the total abnormalities) when analyzed by sex. The number of cases was felt to be too small to attempt the subanalysis by age.

The results from the examinations (2,191) in the North Carolina plant were similar, e.g., initial abnormal rate of 6.3 per cent corrected to 5.0 per cent (115 cases). At present, follow-up studies of individuals with abnormal responses are in progress, and the results of this investigation will be the subject of a future communication. Our initial impressions in this study, however, lead us to believe that approximately 50 per cent of the "nonpattern" scotomas which were evidenced in the initial tests were not confirmed by further tests and were probably initial false positives. The earlier abnormal response is presumed to be determined by fatigue, poor comprehension of the test, or confusion by external stimuli (light, noises, interruptions in the testing environment, etc.). At present, our follow-ups have been done on less than one seventh of the total abnormalities, but retesting in these cases has yielded no proved cases of previously unknown glaucoma, tumor, or other progressive condition.

It has been our experience that the Multiple-Pattern Field Screener provides a rapidly administered test adaptable for use in large population screening. We should like to emphasize, however, that our initial experience leads us to feel that there will be a high incidence of false positives, especially if the tester is not adequately trained in the use of the equipment and has not been motivated to exercise effort and patience in instructing the testee. Of concern to us, in using it in industrial groups, is the large number of referrals which apparently will have to be made for definitive opinions. More adequate retesting techniques on the screening level should be used to decrease these false positives. We plan to follow up a sample group with negative results, to determine the incidence, if any, of false negatives in our series.

SUMMARIZATION

1. The Harrington Multiple-Pattern Field Screener used in an industrial population of 7,821 individuals showed an over-all yield of abnormalities of approximately 5 per cent; there were twice as many abnormalities in men as in women, and for each sex these abnormalities increased with advancing age as much as sevenfold.
2. For the total population, the number

TABLE I
INCIDENCE OF ABNORMALITIES BY AGE AND SEX AMONG 5630 EMPLOYEES IN SIX INDUSTRIAL PLANTS*

	AGE GROUP						TOTAL GROUP
	35 AND UNDER		36-50		51 AND OVER		
	PER CENT	NO. OF CASES	PER CENT	NO. OF CASES	PER CENT	NO. OF CASES	PER CENT
Males	2.2	28	4.8	56	12.2	83	5.2
Females	0.9	11	2.0	21	7.8	16	2.0
Both	2.1	39	3.0	77	11.2	99	3.8

*Percentages are based on 3191 males and 2439 females, divided into the various age groups. Ulcers, opacities, etc., are not tabulated as abnormalities (see text).

of recognizable "patterns" found showed the same trend with age and sex as listed above. However, when considered as a percentage of the abnormal responses, the presence of "patterns" was uninfluenced by age or sex.

3. Unilateral versus bilateral distribution of abnormalities did not seem to be influenced by age or sex. There was, however, a greater incidence of bilaterality in the recognizable "patterns."

4. Procedural difficulties with large population samplings are listed, and areas for further investigation are indicated.

REFERENCE

1. Harrington, David O., and Flocks, Milton: Multiple pattern method of visual field examination, J.A.M.A., 157:645-651 (Feb. 19) 1955.

DISCUSSION

DAVID O. HARRINGTON, M.D., San Francisco: This is the first report of what, I hope, will be a series of sudies of the multiple-pattern method of visual-field examination by independent workers, some of them in industry, some working in mass surveys for the detection of ocular or neurologic disease, and some using the method as a research tool for the study of mechanisms of visual perception.

Dr. Robertson's report should be convincing because of its qualitative and quantitative excellence. He has used meticulous care in his conduct of the study and in his analysis of the results, and he has amassed a quantity of data sufficient to ensure statistical validity. Dr. Robertson was the first of the industrial physicians to become interested in the use of the visual field screener as a mass testing technique in industrial medicine. On February 28, 1955, nine days after the publication of our article in the Journal of the American Medical Association, I received a letter from him explaining the nature of his work and requesting further information on the method. We sent him a Visual Field Screener, and in June he reported that after preliminary studies, he "liked it very much indeed." Since then he has been industriously collecting and collating

TABLE II
ABNORMALITIES SHOWING RECOGNIZABLE PATTERNS*

	AGE GROUP						ALL AGE GROUPS
	35 AND UNDER		36-50		51 AND OVER		
	PER CENT	NO. OF CASES	PER CENT	NO. OF CASES	PER CENT	NO. OF CASES	PER CENT
Males	22	6	21	12	29	24	25
Females	9	1	14	3	19	3	14

*Percentages are based on numbers in each age group within each six (see table I).

TABLE III

NUMBER OF ABNORMALITIES BILATERAL AND UNILATERAL*

	AGE GROUP						TOTAL GROUP			
	35 AND UNDER		36-50		51 AND OVER		BILATERAL		UNILATERAL	
	BILATERAL	UNILATERAL	BILATERAL	UNILATERAL	BILATERAL	UNILATERAL	NO. OF CASES	PER CENT	NO. OF CASES	PER CENT
Pattern										
Males	4	2	6	6	15	9	25	60	17	40
Females	0	1	2	1	1	2	3	43	4	57
Both	4	3	8	7	16	11	28	57	21	43
Nonpattern										
Males	5	17	4	40	15	44	24	19	101	81
Females	1	9	3	15	4	9	8	20	33	80
Both	6	26	7	55	19	53	32	19	134	81

*Listed by age, sex, presence or absence of recognizable "pattern."
Actual number of cases given for subgroups instead of percentages, as the number in some of the categories was so small that percentages would not be meaningful.

the data on the 7,821 persons tested in his mobile units to date. This is the largest single group of persons examined by this method of visual-field examination, and the mere existence of this report in so short a period of time is evidence of the efficiency of Dr. Robertson's procedures and of the efficiency and practicality of the multiple-pattern method of visual-field examination.

At about the same time that Dr. Robertson began his work, Dr. Hedwig Kuhn became interested in the Visual Field Screener. As you know, Dr. Kuhn is an authority on all phases of industrial ophthalmology and was secretary of the joint committee on industrial ophthalmology during its existence. Dr. Kuhn believes in the principle of the multiple-pattern method of visual-field screening and has been most active in promoting its use in a number of large industrial plants and in conducting her own study of the method.

Among the industries now using the Field Screener in their medical departments are The Standard Oil Company of Indiana and the Inland Steel Company. Both have indicated that they are quite satisfied with the method. Dr. T. J. Smith of Standard Oil has written that they have already finished a screening examination of the employees of their Transportation Division with satisfactory results and that they are continuing the test in other divisions. He states, "We had at first thought of using your Tester only on those over 40 years of age; however, we find that it takes so little time and is so easily done that we now plan on using it on everyone." In addition to these studies, the results of which will probably be published, there have been a number of investigations of the efficacy of the multiple-pattern method of visual-field screening in mass surveys for the detection of ocular disease, especially glaucoma.

In one of these, Dr. Daniel Vaughan, in a survey of 1000 patients in the Agnews State Mental Hospital in Northern California, found an incidence of 1.9 per cent of glaucoma. Of these 19 patients, the majority had visual field defects, and in every case the Visual Field Screener detected the defect, which was subsequently confirmed by standard perimetric techniques.

The California chapter of the National Society for Prevention of Blindness has conducted a series of five glaucoma-detection surveys encompassing approximately 3000 patients. They report close correlation between the field changes detected on the screener and case detection by other methods of examination, and they are well satisfied with the method. Without the Field Screener it obviously would have been impossible to examine the visual fields of so many people in the limited time available. In this connection, Charles P. Tolman, Director of the Glaucoma Research Project of the Ophthalmological Foundation of New York, writes me they used the Multiple Pattern Screener at the 52nd Annual Meeting of the Department of Health of the State of New York and found that persons could be readily screened in an average of less than two minutes.

Another report of much interest concerns the use of the Multiple Pattern Field Screener in routine testing before issuing drivers' licenses in Colorado. This comprehensive study of minimum visual standards for safe driving, by Dr. Ralph Danielson of Denver, is now in press and will appear shortly in the Transactions of the American Ophthalmologic Society. It includes a comparative study of multiple methods of visual examination, including a number of methods of visual field testing. It concludes that visual-field examination is a necessary and important part of driver testing and that the Harrington-Flocks Multiple Pattern Screener is the most satisfactory method of accomplishing this examination.

Colonel J. H. King, Jr., former chief of the Ophthalmology Service, at Walter Reed Hospital, wrote to me in May 1955 that they had processed on the Screener some 5000 patients as part of the routine examination, and about 50 patients with complicated cases, and that the results would, in time, be published. He stated that there was "no question about the over-all value of the screener" and that the test is "a great advance in visual field screening." His only cirticism was that the screening cards were not sturdy enough and suggested that they be bordered in plastic. Dr. Flocks and I have investigated this idea, but we have found that it would add so much to the cost of the book of test cards that it would be much cheaper and more practical to replace a worn set of cards with a new book, when needed.

One of the most interesting results of Dr. Robertson's study is the close parallel between his normal error percentage and that which Dr. Flocks and I reported in our original paper. You will recall that we reported erroneous responses to the multiple patterns in 2 per cent of the young and middle-aged groups and another 5 per cent erroneous response in persons over 65 years of age. We attributed these errors mainly to failure to understand the test, and in this Dr. Robertson agrees, but we also

felt that in some cases they were due to the fact that the test makes use of double stimulation and so accentuates the field loss by eliciting the "extinction phenomenon." This same error was found by Bender in the older age group in his testing of peripheral sensory perception. Further studies of this group lead me to believe that in many cases the multiple-pattern method is a more sensitive test of visual field loss than standard methods of examination with single stimuli. What appears to be an error in response may, in fact, indicate a truer picture of the visual field than is ordinarily obtainable. It is better to have a slight error resulting in "over-referral" of cases for more definitive examination than one which results in overlooking existing pathologic conditions.

As a comment on Dr. Robertson's remarks on the use of retesting techniques to decrease the incidence of false positives in the test, I would like to summarize the results of two surveys conducted by Dr. T. F. McGough, Director of Public Health for the City of Alexandria, Virginia. A total of 4,968 persons were tested in a two-day survey; Dr. McGough's conclusions to date are as follows:

"1. Approximately 5 per cent of the adult population in this area will fail the Harrington Multiple Pattern Visual Field test if an average of less than four minutes per person is used in the preliminary screening. [Our original recommendation was four minutes.]

"2. This figure of 5 per cent can be reduced to a more realistic and accurate figure of 2 per cent if an opportunity is provided for a secondary screening in a separate room before the person leaves the building on that same day.

"3. To date, out of 47 persons who twice failed the Visual Field Screening we have had ophthalmologic confirmation on 43, or 91.5 per cent.

"4. In our hands the Screener has done everything that Dr. Harrington claims it will do, and our three local ophthalmologists have enthusiastically confirmed my own observations."

In concluding this lengthy discussion, I should like to quote from my letter to Dr. Hedwig Kuhn in response to her request that I present a paper on this subject at the Industrial Medical Association:

"It is my belief that an author who pushes his ideas too hard is apt to be viewed with some suspicion. If the idea has value, it will be accepted and used by others. The contributions of these independent and disinterested workers to the subject matter of the idea will be more valuable and insure more widespread acceptance of the idea than a continuing rehash of the subject by a prejudiced author."

It is for this reason that I am grateful to Dr. Robertson for his report today and to the other investigators for their generosity in furnishing me with the data from their individual studies of the multiple-pattern method of visual-field examination.

PENETRATING WOUNDS OF THE EYE

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A PENETRATING wound of the globe is usually a serious injury and frequently results in loss of useful vision. In a few cases the penetrating wound may be missed on the first examination, and it is only the subsequent reaction that leads one to suspect the true nature of the condition.

Duke and Schimek[4] reported on a series of 444 patients with perforating wounds of the globe. These injuries occurred almost twice as frequently during the first ten years of the individual's life as during any subsequent decade. Injuries occuring in males outnumbered those in females four to one. The visual results were essentially the same whether or not the penetrating wound was complicated by the presence of an intraocular foreign body. Fifty-five per cent of the eyes were enucleated or had only light perception. Sixteen per cent of the patients could see hand movements or had vision only up to 20/100, and only 27 per cent had better than 20/70 vision. In those cases with lens damage, the prognosis for better than 20/60 vision was markedly reduced. The incidence of infection was much higher when there was damage to the lens or when an intraocular foreign body was a complicating factor.

In any penetrating wound of the globe, whether it be obvious or only suspected, one must not forget the importance of a good history. One should always note *how, when* and *where* the injury occurred. One should inquire as to the visual status of the patient before the accident. One is much more likely to get an honest answer at the time of the original examination than later, when the patient has had time to consider the possible compensatory benefits. If the presence of an intraocular foreign body is suspected, one should attempt to find out whether it is iron, copper, brass, lead or glass. It may even be possible to get a sample of the material. This may be important if some of the new alloys are involved.

In doubtful cases the anterior segment should be carefully scrutinized with the slit lamp. The gonioscope can also be of great value. I have found unsuspected foreign bodies in the angle and holes in the root of the iris when the wound of entrance was obscured by the conjunctiva. The conjunctiva should be carefully scrutinized, and small lacerations and hemorrhages should not be dismissed as inconsequential. I am sure that all of you, at some time or other, have exposed a small subconjunctival laceration only to find a fairly large scleral laceration with prolapse of ciliary tissue. There should be no excuse for missing a penetrating wound, and if one is seen or even suspected, a roentgenogram of the orbit should be made to confirm or rule out the presence of an intraocular foreign body. In young children it may be impossible to determine the extent of the injury without examination under anesthesia. If this is necessary, it should be done in the operating room, where facilities for repairs are available.

When treating any penetrating wound of the globe, there are certain general

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measures which should be carried out, irrespective of whether the wound is in the anterior or the posterior segment. The first precaution is the prevention of infection. Leopold[5] in a recent article presented six cases of intraocular infection which occurred despite the prophylactic administration of an antibiotic in adequate doses. Chloramphenicol is the antibiotic of choice because it penetrates the ocular tissues so well; Leopold recommends 3 gm. as an initial dose, then 1 gm. every six hours. This drug, however, is not very popular at the present time because of reported blood dyscrasias due to its use. Penicillin and streptomycin may be used, but they should be employed in concentrations sufficiently high to be effective. Another measure that should not be neglected is the administration of tetanus antitoxin or a booster dose. Sensitivity to the antitoxin should be determined before its administration.

In discussing penetrating wounds of the globe, one could separate them into several categories: with iris prolapse, without iris prolapse, with lens involvement, with the presence of an intraocular foreign body. Such a classification becomes rather complicated. I should like to discuss, first, the management of perforating wounds of the anterior and posterior segment which are not complicated by the presence of intraocular foreign bodies, and second, the management of cases in which intraocular foreign bodies are involved.

PENETRATING WOUNDS NOT COMPLICATED BY FOREIGN BODIES

Corneal Lacerations

The treatment of uncomplicated corneal lacerations is usually not difficult. In some instances the wound is closed, and the anterior chamber is re-formed. When this is the case, the tendency of the surgeon is usually to do nothing but put a patch on the eye. It is my personal feeling that any corneal laceration more than 3 mm. in length should be closed with direct corneal sutures. Though the wound appears secure, I think there is a greater tendency for the cornea to buckle and produce irregular astigmatism if the wound is not sutured. With Grieshaber needles and good anesthesia and akinesia, direct corneal suturing can be accomplished with relatively little trauma. I personally prefer to induce general anesthesia as a supplement to local anesthesia in any patient who is apprehensive or when it is known that the procedure will be prolonged. I do not favor the use of a conjunctival flap unless there is a jagged wound which cannot be closed neatly with direct sutures. A conjunctival flap only obscures the wound and adds little support when direct sutures are used.

Scleral Wounds

If a scleral wound is suspected, the patient should be prepared in the regular manner, and after adequate anesthesia and akinesia have been obtained, the conjunctiva should be incised and the wound exposed. I am sure that you have all been surprised at one time or another to find a much larger scleral wound than you suspected. Here again direct sutures should be used to close any wound larger than 3 mm. or any wound complicated by prolapse of the choroid or the ciliary body. If there is a prolapse that can be re-placed, a paracentesis of the anterior chamber will facilitate the repair of the eye if it is not already soft. A thin spatula will be of help in depressing the prolapsed tissue while tying the sutures.

Wounds of Anterior Segment with Iris Prolapse

Many perforating wounds of the anterior segment are associated with iris prolapse. A few years ago all prolapsed iris tissue was excised. With the advent of better suturing material and reduction

in the chances of infection, ophthalmologists have been attempting to re-place prolapsed tissue whenever possible. If the prolapse is fairly extensive or if the sphincter is torn, attempted re-placement will usually fail and the prolapsed iris should be excised. If the iris is to be replaced, this should be accomplished with the minimum chance for the formation of an extensive anterior synechia. It is difficult to free, from the lips of the wound, any prolapse which has existed for more than twenty-four hours and which is firmly incarcerated in the wound. If only the base of the iris is incarcerated, one may excise a portion of the iris, leaving the sphincter intact. If the sphincter is involved, a complete iridectomy is the safer procedure. Once the iris is freed and the wound sutured, air should be injected into the anterior chamber (fig. 1). If an anterior synechia is present, the iris can frequently be freed by introducing a spatula inside the limbus through a small bevelled wound on either side of the original laceration. If the spatula is swept over the area of contact, the air in the anterior chamber will usually cause the iris to fall back to its proper position. Any iris incarceration, if extensive enough to warrant repair, should be treated surgically. I have never known a miotic, even DFP, to cause the release of an iris incarcerated in a wound.

Every attempt should be made to clear the anterior chamber of hemorrhagic blood before closing the incision. Hemorrhage into either the anterior or posteterior segment may be an annoying and even disastrous complication. Hemorrhage into the anterior chamber from penetrating wounds has not, in my experience, been as annoying as the hyphema that may follow contusions. Thygeson

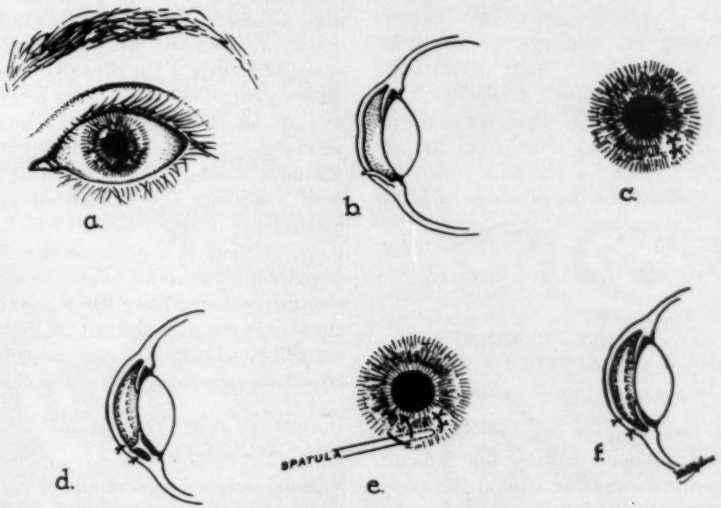

FIG. 1—(a) Small iris prolapse, 5 o'clock meridian; (b) side view of the same; (c) sutures in place; (d) air bubble demonstrates remaining anterior synechia; (e) synechia is freed by introducing spatula to either side of the wound; (f) air bubble demonstrates complete freeing of synechia.

and Beard[9] recently reported a series of cases of traumatic hyphema. Out of 34 patients, 2 had light perception and 3 were blind, 2 eyes being enucleated. I do not agree with their recommendations as to treatment of contused wounds, though I do think that in every case of a penetrating wound of the eye, atropine should be placed in the affected eye and a binocular dressing should be applied.

Penetrating Wounds with Damage to Lens

Many penetrating wounds cause some damage to the lens, which may be minimal or may be extensive. If the damage is not extensive and the lens is not swollen, I favor repairing the wound and letting the lens alone. If there has been a penetrating wound of the cornea, if the anterior capsule has been ruptured, and if the lens is swollen when the patient is first seen, an attempt should be made to remove lens substance. This is especially true if the lens may be expected to swell enough to cause bulging of the wound. Removal of lens substance may be effected through the corneal wound if it is large enough. If it is not, a keratome incision may have to be resorted to. As in the case of most extracapsular extractions, as much of the anterior capsule as possible should be removed. It is very important that any capsule tissue adherent to the wound be removed. Since many penetrating wounds of the lens are through and through, every precaution should be taken to prevent the loss of vitreous and, if possible, to keep vitreous out of the anterior chamber. It would be much better to allow cortex to remain in the anterior chamber until a vitreous–posterior-capsule membrane has formed. In irrigating lens material out of the anterior chamber, I have found the long-tipped Randolph cyclodialysis irrigator of great value. One can frequently get cortical material from underneath the iris. At the conclusion, air should be placed in the anterior chamber to free the posterior surface of the wound from capsule, cortex or iris.

Should linear extraction be postponed until a later date, I have found the procedure described by Cordes[3] for congenital cataracts to be very satisfactory. That is, I make a preliminary knife needle incision for the injection of air. The keratome incision is then bevelled, with a suture placed through both lips of the wound. The anterior lens capsule is removed with capsule forceps, and as much of the cortex and nucleus is removed as possible. One must never lose sight of the fact that in penetrating wounds of the lens the injury may have been through and through, and that the anterior hyaloid may have been ruptured. In such cases, vitreous is easily lost, so an attempt to remove capsule or cortex with forceps is dangerous.

Wounds penetrating the posterior segment are treated much the same as those occurring in the anterior segment. Because these wounds are frequently more extensive than one suspects, it is preferable to use general anesthesia rather than local anesthesia. This is especially so if traction has to be made on any of the muscles. A retrobulbar block is dangerous in these cases because of the possibility of a retrobulbar hemorrhage. Conjunctiva and Tenon's capsule should be dissected free, exposing the entire scleral wound. If there is any danger of choroid or vitreous prolapse, a paracentesis of the anterior chamber should be performed. This serves to reduce the intraocular pressure and will facilitate suturing the wound. Direct scleral sutures with a Grieshaber needle should be used. Vitreous, if present, should be excised, and the choroid should be replaced if possible. Many such eyes have suffered irreparable damage, and enucleation may have to be performed. These cases also are frequently compli-

cated by hemorrhage into the vitreous and damage to the retina. It is surprising, however, what dramatic cures are sometimes obtained. Two years ago I saw an 18-month-old child who had fallen on a broken milk bottle. There was a half-inch through-and-through laceration of the upper lid and a half-inch laceration of the sclera to the temporal side of the superior rectus muscle. Vitreous was flowing from the wound. The wound was sutured, and intrascleral diathermy was placed about the incision. The parents were advised that enucleation might be subsequently performed. Today the child has what appears to be a normal eye, the retina is intact, and only a few diathermy scars can be seen. I am a firm believer in the use of intrascleral diathermy for any wound behind the ora serrata.

WOUNDS INVOLVING FOREIGN BODIES

The management of intraocular foreign bodies is always a subject that arouses discussion. A considerable literature has accumulated on this subject, and there are still differences of opinion as to how some of these cases should be handled. Accurate localization and a knowledge of the size of the foreign body are just as important as speedy removal.

The two most common methods of localization are those developed by Sweet[8] and Comberg.[2] Sweet first exhibited and described his apparatus in 1897 before the College of Physicians in Philadelphia. His apparatus was simplified and modified to its present form in 1909. Comberg, in 1927, described the use of the Zeiss contact lens. Pfeiffer,[6] who has had wide experience in ophthalmic radiology, prefers the contact-lens method and feels that it is the more accurate. In response to a personal inquiry to several large medical centers in this country, I found that there did not seem to be any great preference for either of these methods over the other. Everyone who has had any experience admits that all techniques leave something to be desired. The results depend upon the interest of the radiologist and his technician and upon the cooperation of the ophthalmologist. This can be a real problem, especially in a small hospital. Unless the radiologist has some familiarity with cases involving intraocular foreign bodies, he may dismiss evidence of the presence of a small foreign body as an artifact on the film. I have seen this happen, unfortunately, on more than one occasion.

Shipman, Delaney and Seely,[7] in a recent paper, discuss the various types of magnets that are now available. They stress the value of the giant magnet. This is probably due to the fact that they prefer extraction of foreign bodies by the anterior route. I have used the giant magnet on several occasions, but I have found that most foreign bodies can be extracted with the smaller and more convenient hand magnets. I am essentially in agreement with the statement of Callahan[1] that foreign bodies which are located anterior to the ciliary body or in the lens can be removed most expeditiously from the anterior segment. I originally tried removing small foreign bodies in the posterior segment by pulling them around the lens with the giant magnet. This can be accomplished without damage to the lens, but the foreign bodies frequently become enmeshed in the ciliary body and their extraction is difficult. I now prefer to remove foreign bodies in the posterior segment through a scleral incision in the region of the pars plana. I make an exception to this practice when the eye has been badly traumatized and there is a large corneal wound with maceration of the lens. In these cases the eye is usually lost as far as functional use is concerned, and it makes little difference how the foreign body is removed.

I cannot agree with those who state that the Berman locator is not of much value. I have found it of great value when properly used, and with it I have located foreign bodies which, on extraction, were barely visible to the naked eye.

Foreign bodies in the anterior segment are sometimes visible, and their extraction is usually not difficult. Those behind the iris sometimes cannot be dislodged. When this is the case, a keratome incision is made just in front of the limbus over the site of the foreign body. The iris can be withdrawn and everted; the foreign body is then removed with the magnet or forceps under direct observation. A complete iridectomy is usually unnecessary, though an iridotomy may be accomplished if the foreign body is pulled through the iris. The chamber should be filled with air to prevent anterior synechias.

Foreign bodies in the lens are always an interesting problem. If the foreign body is minute and the lens is relatively clear, I would favor keeping the patient under observation and removing the foreign body only if there are signs of siderosis or if the lens becomes opaque.

Foreign bodies in the posterior segment are always a challenge, and I am sure you will all agree that they can prove very trying. It is my opinion that with few exceptions they should be removed in the region of the pars plana, unless the wound of entrance is readily accessible in the posterior segment. If the foreign body is more than 1 mm. in size, it may dimple the sclera when it responds to the magnet. If the dimpling is not obvious, the location should be checked with the Berman locator. When one is certain of the location of the foreign body, a scratch incision is made through the sclera, tangential to the limbus. A suture is then placed through the sclera. This serves to retract the edges as one cuts down to the choroid. Once the choroid is exposed, a paracentesis is done to reduce the intraocular pressure and lessen the chance of vitreous loss. The magnet is then applied to the choroid, and the foreign body is delivered. (Occasionally one may have to enlarge the scleral incision at one end.) The suture is tied, and the area is surrounded with intrascleral diathermy.

If the foreign body is to be removed through the wound of entrance in the posterior segment, the same precautions are followed.

On occasion, the foreign body is imbedded in the posterior segment and cannot be moved forward to the pars plana. In such a situation the Berman locator is of inestimable value, for the site must be accurately localized before cutting down on the sclera. If the foreign body is visible with an ophthalmoscope, the localization is further checked by the use of intrascleral diathermy. The retinal and scleral reaction to the current serves as another point of reference. Needless to say, when one has performed a sclerotomy in the posterior segment, great care must be exercised not to increase the intraocular pressure by pulling on the muscles and sclera in exposing the operative site. The scleral wound should be tightly sutured and the area surrounded with surface diathermy before closing the conjunctival wound.

It is surprising what insults the eye will sometimes stand. I have records of two rather unusual foreign bodies. Both of them measured almost 1 cm. in length. The large one entered the sound eye of a patient who had lost his other eye through a similar accident seventeen years before. It was removed from the wound of entrance 6 mm. from the limbus, below the insertion of the internal rectus muscle. Fortunately and unexpectedly, the patient regained 6/6 vision.

Mention must be made of the removal of glass from the eye (fig. 2). Any glass in the anterior segment must be lifted out — not pulled through an inadequate incision. I have found that a limbal incision using both preplaced and postplaced sutures is the most satisfactory. The cornea is turned down, and the glass is lifted off the iris or lens. Attempts to pull even a small piece of glass through the wound of entrance usually results in splintering of the glass and unnecessary damage to the eye. Small particles visible only with the slit lamp are better let alone, since glass is a relatively inert substance.

Nonmagnetic foreign bodies are always a most serious problem. Unless they are visible in the anterior segment, attempts to remove them from the posterior segment have, for me, always ended in failure. I have not used the biplane fluoroscope. The endoscope has never been successful in my hands. The incision has to be so large and one is so unfamiliar with the manipulation of the instrument that the eye is usually severely mutilated. If the fundus is visible, I think it much better to attempt removal through a scleral incision under direct observation with the ophthalmoscope.

SUMMARY

It is important to get a good history of the accident, especially if the case is compensable or may involve litigation. Some penetrating wounds can be seen only with the slit lamp, and some foreign bodies in the angle can be seen only

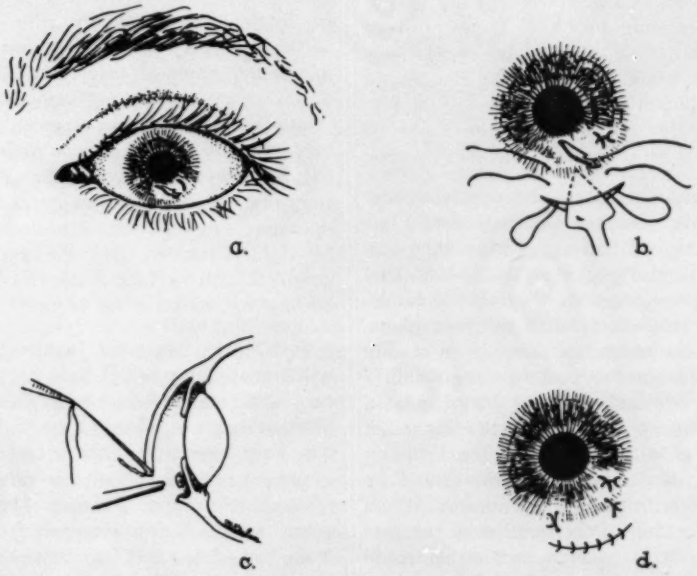

FIG. 2—(a) Small piece of glass in the anterior chamber; (b) corneal suture through point of entrance and keratome incision into the anterior chamber with preplaced sutures; (c) original incision has been enlarged so that the cornea may be lifted up and glass removed under direct observation; (d) corneal scleral sutures tied, anterior chamber re-formed with air or saline.

with a gonioscope. A roentgen examination should be performed to determine whether or not an intraocular foreign body is present.

All penetrating wounds should be considered as potentially infected and should be treated with full therapeutic doses of local and systemic antibiotics.

Corneal wounds should be sutured with direct corneal sutures. A conjunctival flap is seldom necessary. Treatment of iris prolapse will depend on the duration of the prolapse and the condition of the sphincter. Recent prolapses with an intact sphincter can frequently be replaced prior to suturing the wound. Air should be injected into the anterior chamber to ensure that there is no anterior synechia.

Scleral wounds are frequently more extensive than the conjunctival wounds would indicate. If the eyeball is not soft, a paracentesis should be performed. This reduces the chance of loss of vitreous. Should the wound extend beyond the pars plana, diathermy should be applied to the sclera.

Traumatic cataract is a frequent complication of a penetrating wound. If the lens damage is not extensive and the lens is not swollen, it may be let alone until the wound heals. Should a linear extraction be imperative, as large a portion of the anterior capsule as possible should be removed, followed by gentle irrigation of cortical material from the anterior chamber.

Penetrating wounds of the posterior segment are treated much the same as penetrating wounds of the anterior segment. Since these wounds are frequently extensive, general anesthesia is preferable to local anesthesia.

Intraocular foreign bodies should be localized by roentgenograms. A Berman locator is of great value, especially in small foreign bodies. As a general rule, magnetic foreign bodies in the anterior segment should be removed by the anterior route, and those in the posterior segment through the pars plana.

Nonmagnetic foreign bodies in the anterior segment require large corneoscleral incisions for their removal. Sometimes a hemisection, as for a cataract extraction, is necessary. Nonmagnetic foreign bodies in the posterior segment offer a very poor prognosis. In the author's hands, an endoscope has not proved of much value.

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DISCUSSION

MURRAY F. MCCASLIN, M.D., Pittsburgh: The author is to be congratulated on his very excellent presentation of this problem during the time that has been alloted to him. I am in agreement with Dr. McDonald that chloramphenicol, to be used orally, is the antibiotic of choice in intraocular injuries, that penicillin and streptomycin may be employed, in high concentrations, and that tetanus antitoxin or toxoid should be administered after sensitization determinations. In addition, I have found it advantageous when necessary, to use 1:10,000 penicillin solution or 0.25 per cent chloramphenicol solution as an irrigating fluid instead of normal saline solution.

I am a strong advocate of the use of the conjunctival flap in closing corneal wounds, with or without corneal sutures. A properly placed conjunctival flap, secured with 4-0 black silk mattress sutures and a 6-0 wing suture on each side, to smooth out the conjunctival edges, produce a firm closure and a better blood supply to the lacerated area. It will also permit an opening adequate through which to view the iris, during postoperative dressings, to detect any initial changes in this tissue.

I would like to emphasize what Dr. McDonald has stated, that paracentesis of the anterior chamber will facilitate the repair of a lacerated sclera if the eye is not already soft. This procedure, done under proper conditions, is absolutely safe.

Relatively few irides re-placed after prolapse will heal without anterior synechias. For that reason, I advocate a fine-line iridectomy, which removes the pillars of the iris from the edges of the wound and permits less opportunity for the formation of the synechias.

I am certainly in agreement with the author in stating that accurate localization of a foreign body depends on the interest of the radiologist. Because this interest does vary, we routinely have two or more localizations made by the same radiologist, or one by two different radiologists.

There are many advocates of the removal of a foreign body by the anterior route, employing a giant magnet, but I am not one of them, nor was my predecessor, Dr. Edward Stiern, whose experience in this field was greater than that of any other man of his day. With this technique, an otherwise clear lens may be damaged or the foreign body may get enmeshed in the ciliary body.

From the localization furnished by the roentgenologist, it is quite impossible to cut down accurately on a small foreign body that lies within the retina, the choroid, or the sclera. The Berman locator will be of help, if this technique is used. The procedure which I have used for many years, and which has proved quite satisfactory, entails making the incision in the sclera on the side of the globe opposite the foreign body. Thus there is less likelihood of the sawtoothed edges of the foreign body becoming enmeshed deeper within the scleral fibers. One must remember in removing a minute foreign body that it is not the magnetic force of the magnet that determines how much pull there is exerted upon the foreign body, but it is how much magnetic force can be induced in the foreign body. This force is in direct proportion to its volume, consequently minute foreign bodies are relatively weak magnetically. To produce magnetic saturation in a minute foreign body requires repeated applications of magnetic force of short duration, the technique of bumping or rocking described by Dr. Gifford. This technique induces the greatest magnetic density in small foreign bodies and thus enables them to overcome the force of inertia and move through space. With our present-day magnet, this is accomplished by the application of the foot switch at intervals of a few seconds. The greatest number of recorded applications is 150, but in most instances 25 or 30 are sufficient.

I would like to emphasize again the necessity for intrascleral cauterization after incisions in the posterior segment; this can be either diathermy, actual cautery, or cautery by the use of phenol. Retinal separations just do not occur if this procedure is followed, but they will if it is neglected.

DR. MCDONALD: I am very glad that Dr. McCaslin brought out one point that I forgot to mention, the application of diathermy about the wound on any occasion behind the ora serrata. In most of these cases the vitreous is fairly healthy, and I should like to suggest that you use unipolar diathermy rather than bipolar diathermy, since there is less chance of injury to patients. That is done, if the lead is under the patient's shoulder, by disconnecting it at that time.

A Report from the Subcommittee on Noise in Industry

* * *

I

INTRODUCTION

HOWARD P. HOUSE, M.D.
LOS ANGELES, CALIFORNIA

IT will be of interest to some of you to become acquainted with our project. To make this possible, we should touch briefly upon the history of the Subcommittee on Noise in Industry. In 1946, Dr. Gordon Hoople, as a member of the Committee on Conservation of Hearing at that time, proposed a motion that a subcommittee be appointed by the chairman, Dr. Dean M. Lierle, to study the problem of noise in industry as it affects hearing.

Dr. William Grove of Milwaukee was appointed chairman of the subcommittee, which originally consisted of four members: Dr. Grove as chairman, Dr. Hoople, Dr. Stacy Guild and Dr. C. Stewart Nash.

The Academy advanced a grant of $5,000 to the subcommittee through the Committee on Conservation of Hearing. A group outside the Academy, which was contacted through the efforts of Dr. Grove, matched this grant of $5,000. This made it possible for the subcommittee to obtain a field representative, Dr. Douglas Wheeler, who could devote his full time to the problem by approaching representatives of industry and attempting to gain entry to their plants to study the effects of noise in actual working conditions.

Presented at the Sixtieth Annual Session of the American Academy of Ophthalmology and Otolaryngology, Oct. 9-14, 1955, Chicago.

Since that time the subcommittee has grown. Instead of four members, there are now eight members. We have one research consultant, Professor Walter Rosenblith. We have two liaison members: one from the Industrial Section of the American Medical Association, who acquaints that group with our activities; and another from the Canadian Medical Association.

Since 1946 our budget has grown from the original $10,000 to a total of $100,000 per year. The Academy has continued to support this grant in the same amount that was originally subscribed. We now have nine full-time people working in the Research Center of the Subcommittee in Los Angeles.

At the present time we have acquired and have under surveillance 19,000 audiograms of persons working in one plant. Another plant supplies us with 10,000 audiograms, all of personnel working in known noise levels, with accurate audiometry at periodic intervals. We have a total of some 50,000 audiograms running through our IBM machines, and information is gradually coming to us pertaining to the over-all problems of noise in industry.

It is our purpose to acquaint you with some of these activities, and to bring the ever-increasing importance of this program to you. As otologists you will be aware of these cases more and more as times goes on.

II

RESEARCH ACTIVITIES

HALLOWELL DAVIS, M.D.
ST. LOUIS, MISSOURI

I SHALL simply outline the five major research problems that are now going on at the Research Center for Noise in Industry.

One of these is the problem of temporary threshold shift. That is the problem of how much the threshold of a worker in an industrial plant may be elevated temporarily during the time that he is at work during the day. This is an important practical problem because most industrial audiometry is done by calling the worker out from his job to the audiometric booth, wherever it may be, and making an audiogram. But if he has already been working for some time in the noise, there is a temporary threshold shift, something that we think of as auditory fatigue and from which he will recover completely overnight, which is included in the audiogram. How are we to allow for this temporary shift when we interpret the audiogram either to find out how the individual is getting along or to collect data for a study of the relationship of noise to permanent hearing loss? Dr. Glorig is going to deal with this problem at some length. This project is farthest advanced of all our research studies, and the staff of the Research Center is now writing papers to present the results in the regular journals.

The second problem is that of permanency. What happens to a man's hearing after he has been removed from the noise, not just overnight or over the weekend, but for a week, a month or six months? How much of his hearing can he expect to recover? Of even more practical immediate importance, how long do we have to wait before it can reasonably be assumed that we can record a stable audiogram without prospect of further recovery? The medico-legal significance of this problem is obvious, and perhaps Dr. Hoople will touch on it. Collection of data has begun. Our subjects are workers who have retired, who are leaving on vacations, or who may have been temporarily disabled. In principle the project is simple, but from the administrative point of view it is extremely complicated to carry out.

The third problem is the development of a speech test using English as it is actually spoken. This, as Dr. Hoople will point out, is something that we need as a starting point for a really valid estimation of the disability incurred by industrial hearing loss. The first step has been to get a sample of such everyday speech. Such a sample has been prepared at Central Institute for the Deaf, and has been tried out by the staff of the Research Center to see whether there were bugs in it, or whether the material seemed satisfactory. The next steps will be to develop a hearing test using this new material and then to compare results of this test with the results of pure tone audiometry in order to validate the rules for interpretation of the latter.

Our fourth project has been of a survey character. At the Wisconsin State Fair, both this year and last year, really

From the Central Institute for the Deaf, St. Louis.

first-class audiometry was carried out, with enough additional information obtained about the people who took the test and with good acoustic conditions in the room where the measurements were made. I believe we can look forward to the data thus collected, now in the statistical mill, as a mine of information for years to come.

Among the problems on which this survey will shed light is the problem of what is normal hearing in the general population. We have some reason to doubt the adequacy of the present standard of zero on the audiometer as representative of normal hearing, and this study will clarify the problem and perhaps bring to an end this particular discussion.

Also, trials and comparisons have been made between results of pure tone audiometry and the presently available speech tests. This comparison, on a large scale and on a statistical basis, is something that has been needed for proper evaluation of the old speech tests, and we look forward to a future study of the new tests of everyday speech in the same way.

The third point in the Wisconsin State Fair Survey concerns presbycusis. What is the normal relation of high-tone hearing loss to age, as such? How can we allow for previous noise exposure, such as an individual may have experienced in skeet shooting, target practice, or work in noisy industry.

The statistical work of analyzing the data in hand will take at least another year to complete, and the data can be used from then on for special purposes for years to come.

Finally, there is our large-scale survey of hearing in industry, made possible through cooperation on the part of many industries. Audiometric data are collected and submitted to the Research Center for filing on IBM cards and, in combination with other data, for statistical analysis. Some of the data are obtained by members of the staff of the Research Center working directly in industrial situations. In other cases they may monitor work that is done by industrial personnel or assist them in setting up programs for the conservation of hearing. But the data which seem to be good enough, which meet criteria regarding the conditions under which they are obtained, and from which sufficient information is available as to the noise exposure of the individuals, are brought together in the Research Center for analysis by up-to-date statistical methods. In this way we hope gradually to build up our information and really to learn something about the relation of hearing loss to noise exposure.

III

RESEARCH ACTIVITIES

ARAM GLORIG, JR., M.D.
LOS ANGELES, CALIFORNIA

THE following is a limited review of some of the results of our work at the Research Center, Subcommittee on Noise in Industry.

From the Research Center, Subcommittee on Noise in Industry.

First, we will consider the problem of hearing loss found at the time the average worker applies for a job. In general, it can be said that approximately 25 per cent of all industrial workers have a hearing loss at the time they

apply for a job. These losses are divided, with 5 per cent showing a severe high-tone loss (fig. 1). This demonstrates the importance of preplacement audiometry. There is no other way to determine how much of any subsequent hearing loss is the responsibility of the new employer.

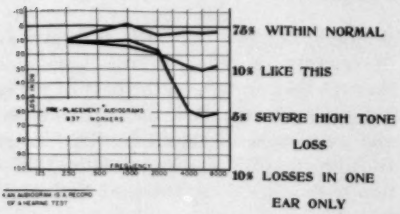

FIGURE 1.

Presbycusis, or hearing loss associated with aging, is important to industry because of its effect on noise-induced hearing loss. It is obvious that when a man sustains more noise exposure as a result of years of employment, his audiogram will reflect a hearing loss which may be the result of aging and noise exposure combined. It is necessary then to know how much hearing loss as a function of age may be expected in the general unexposed population.

The combined results of several surveys yield values which are generally accepted as being the closest approximation of the expected presbycusis in the general population (fig. 2).[1] In our 1954 Wisconsin State Fair Hearing Survey, we compared the hearing loss found in office workers with these curves and found fairly consistent agreement. Until better data are available we feel that these curves are acceptable.

In order to obtain some reliable data on the relation of various industrial jobs, and their associated noise exposure, to hearing loss, we divided the subjects tested in the 1954 Wisconsin State Fair Hearing Survey into groups according

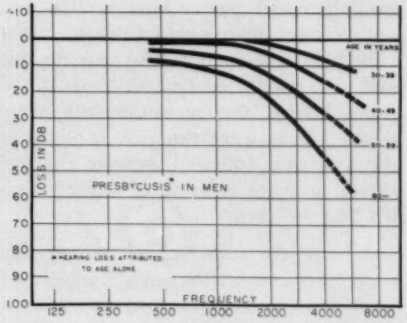

FIGURE 2.

to the amount of over-all noise associated with the job in which each worker had spent most of his working life. Figure 3 shows the hearing loss as a function of each of these noise categories. Number 1 represents 120 db, and over; number 2, 110 to 120; number 3, 100 to 110; number 4, 90 to 100; and numbers 5 and 6 are regarded as non-noisy jobs. Notice the difference in hearing loss associated with each of these categories.

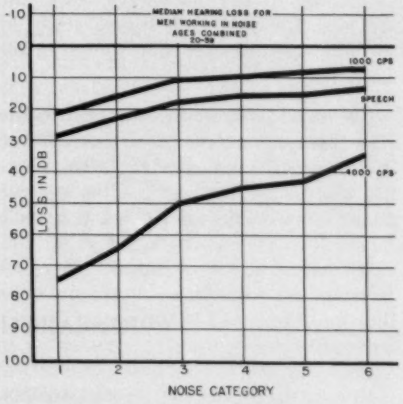

FIGURE 3.

All of us have often wondered what the effects of military service are on hearing. Figure 4 demonstrates this very clearly. Note that Marines show the most hearing loss. This is logical when it is

remembered that these men receive considerably more training in the use of firearms than any others in the military service. On the strength of this, one must always obtain a statement regarding military service before accepting a noise-exposure history as complete.

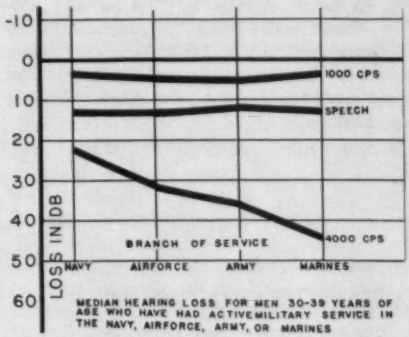

FIGURE 4.

Those of us who have worked with noise-induced hearing loss for any time at all, know that nearly everyone who is exposed to noise during a single workday notices a loss at the end of the day, which disappears sometime before the next morning. We have called this loss a temporary threshold shift or TTS. For this discussion, it is defined as that amount of hearing lost because of one workday exposure to noise and recovered before the next workday begins. Figure 5 demonstrates the amount of TTS produced by exposure to the noise produced by three industrial processes. Figure 6 demonstrates the effect of existent hearing loss on the TTS.

Our report would be incomplete without some comments on ear protection. The amount of protection afforded by ear plugs has always been inferred by pure tone measurements of the attenuation produced by the device. Figure 7 shows a comparison of the amount of TTS

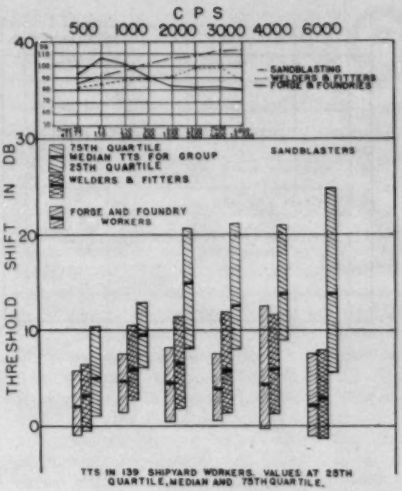

FIGURE 5.

produced in a group of industrial workers with and without ear plugs. Notice the absence of shift when the ear plugs are worn.

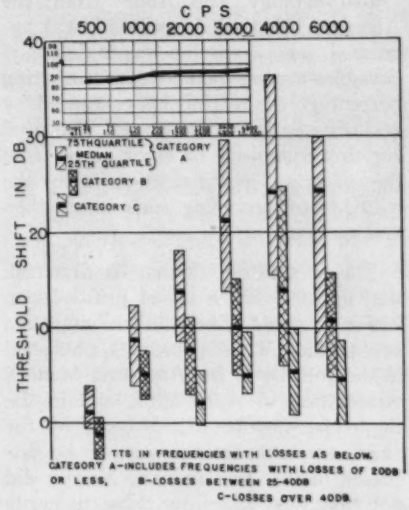

FIGURE 6.

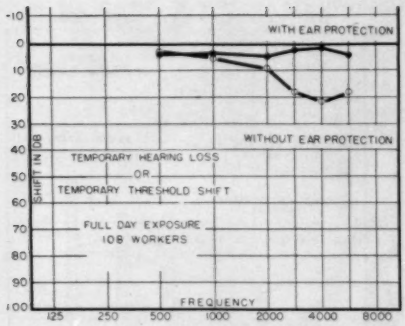

FIGURE 7.

Obviously, this is only a short preliminary report. More complete reports on these subjects will appear in the appropriate journals in the future.

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IV

PRINCIPLES FOR EVALUATING HEARING LOSS

GORDON D. HOOPLE, M.D.
SYRACUSE, NEW YORK

FOUR or five years ago a committee of eight members, four from the American Academy of Ophthalmology and Otolaryngology and four from the American Medical Association, was appointed. Its commission was to devise, if possible, a new method for computing percentage of hearing losses caused by accidents or industrial noises. The need for this committee of eight arose from the growing dissatisfaction with the methods of reporting such losses then and now in practice.

The committee felt that its first task was to formulate a set of principles to which it would adhere in arriving at a new method. These principles, published in the Journal of the American Medical Association in April 1955, and in the September-October 1955 issue of the TRANSACTIONS, are the ones to be discussed in this presentation. Now it did not take the committee long to write the principles, but because there were two parent organizations involved, it took a long time for the two organizations to approve the principles. A change of a few words meant a delay of many months because it had to go first to one parent organization and then to the other.

I am not going to read these principles for they are in your journals. But I have been asked to comment on them. I am going to read some excerpts and say a few words about these.

The preamble or introduction follows:

> A method more satisfactory than those now in use is needed to evaluate hearing losses in terms of the disability that they produce. With a pure tone audiometer, the hearing loss itself can be measured in decibels for tones of different frequency, but this measurement does not denote the degree of disability. Several methods have been proposed for calculating the percentage loss of hearing from the pure tone audiogram, but none of them has proved entirely satisfactory.

The first of these, you know, is the Fletcher 0.8 method. The second is the method adopted by the American Medical Association in 1942 and revised in 1947. Actually, this last A.M.A. method is fairly satisfactory for calculating percentage capacity to hear speech for persons who have conductive hearing losses in which the losses are not very different for different frequencies. For persons with nerve deafness, however, and particularly for those in whom hearing for low and middle tones is good but hearing for the high tones is poor, the results are often in conflict with the clinical evidence.

The preamble says further:

> The most valid way to measure the ability to hear speech correctly is to use words or sentences. . . . The recent development of speech audiometers may make it practical to do so. The unaided human voice, as used in the conventional "spoken voice test" and the "whisper test" is not sufficiently accurate and is confined to too narrow a range of intensity.

Then there are eight definitions and principles that are involved in this document. The first is hearing for speech.

> For the present purpose, hearing is defined as the ability to identify spoken words or sentences under average everyday conditions of normal living by the sense of hearing, unaided by touch or vision. . . . The tests of hearing to be recommended should give a measure, directly or indirectly, of the ability to hear correctly simple statements, commands or questions.

The second point:

> Benefits derived from Hearing Aids and Auditory Training. The probability that a particular type or degree of hearing loss may or may not be benefited by a hearing aid should not be considered in calculating the disability caused by a hearing loss. This follows from the broad principle which is widely accepted that a loss of normal function should be evaluated in the absence of any prosthetic device. The proposed schedule of percentages should not consider the possible improvement in hearing for speech that often results from the kind of prolonged training and practice known as auditory training.

So in making these calculations, hearing aids and auditory training should be discarded.

> Limits of Normal Hearing and of Total Disability. . . . A full definition of normal threshold, either for pure tones or for speech, requires also a statement of the limits of normal. . . . In clinical audiometry, for example, it is generally accepted that a hearing loss of 15 db for pure tones may be within the limits of normal variability. A greater loss than this can be considered abnormal. Also, it is at about this level that the hearing loss usually begins to be noticed by the person. In other words, hearing losses within the limits of normal are usually unnoticed and do not cause any practical handicap. The limit of normal for the hearing of speech may reasonably be assumed for the present to be comparable to that for the hearing of pure tones in the speech-frequency range, but it should be defined more precisely in the future when more measurements and better validation become available.
>
> At the other extreme of the hearing range, there may be a total loss of hearing or a total inability to hear speech. As commonly used, these terms are not precise nor necessarily synonymous. . . .
>
> The concepts of limit of normal hearing and of total inability to hear speech are fundamental. It should be possible to specify both limits in precise objective terms. When they have been established, they will constitute anchor points from which intermediate degrees of disability can be derived.

This is the principle which is commonly known as the high and the low fence. Hearing losses under a certain limit are not practical hearing losses because speech can be understood readily; also, one does not need a total loss of hearing to be totally incapacitated to hear speech. An attempt will be made to set these limits in a proposed new scale of values.

The fourth point is binaural evaluation:

> Measurements should be made of the hearing of each ear separately. A rule should be

established for computing from these measurements the percentage of the total hearing disability when both ears are used.

Fifth is the detection of psychological factors and malingering. Here the authors of the document feel that it is the responsibility of the physician to determine if these are present, and that if they are present his evaluation of the amount of hearing present should be given equal weight with any other test which may be made.

Sixth, it is recognized that if speech tests are used, there must be alternative tests for those who have language difficulties, and this will be attempted.

The seventh principle is important because there are many who have come to the conclusion that this new method will disregard pure tone audiometry. The seventh principle states:

> Pure tone audiometry is essential for determination of the degree and type of hearing loss.

The last point in the document is the problem of causal relation:

> A clinical diagnosis of the type of hearing loss must be made in order to determine causal relation. Pure tone audiograms, both by air conduction and by bone conduction, should be part of the diagnostic study. The following propositions illustrate how such studies may help solve, in individual cases, the problem of causal relation.

The following propositions (there are four of them) illustrate these points:

> 1. Conductive hearing loss cannot be attributed to prolonged or repeated exposure to noise. . . .
>
> 2. Audiometry at appropriate intervals is required to distinguish temporary from permanent hearing loss.

We have already heard about that this afternoon.

> Pure tone audiometry should be employed, as it is a delicate indicator of possible recovery or deterioration.

The third proposition in causal relation is the matter of presbycusis, which has been discussed by the two previous speakers. The authors of this document feel that there should be allowance for presbycusis in any appraisal of hearing loss.

The fourth proposition reads:

> The desirability of a record of the condition of hearing of every employee made at or before the beginning of employment is obvious. . . . In such tests a pure tone audiogram by air conduction should be considered the minimum procedure, and, if possible, speech audiometry should also be used. If the pure tone audiogram by air conduction indicates deviation from normal by more than 15 db for 500, 1,000, or 2,000 cps or 30 db for 4,000 cps, a complete pure tone audiogram by both air and bone conduction and a complete otological examination should be made and recorded. . . .

Finally the document states:

> It is assumed that only instruments that conform to these standards will be employed in making the audiometric tests from which the disability of hearing is to be calculated.

The publication of these principles is only the first step. The means by which they may be supplemented, a formula or method of expressing percentage of hearing loss which will be valid and fair to the plaintiff and defendant alike, is the second step now in the process of completion. It is not yet evident exactly what means will be used to provide a valid test. Dr. Davis spoke of that. However, research is in progress in our Center in Los Angeles and elsewhere.

It is the aim of those conducting this study to provide a means of evaluating hearing loss which will more accurately depict the disablement which a hearing

loss occasions than any method now in use or previously described. Whether or not this is possible remains to be seen.

When the work of this committee of eight was first outlined, it appeared likely that its assignment might be completed in two or three years. More than that time has already elapsed. An optimistic guess for completion of its work would be another two years; it may very well be longer.

If the committee can accomplish its attempt to create a new means of appraising percentage of hearing loss, you can be assured that it will be a method which will be less controversial than any test devised to date.

V

LEGISLATIVE TRENDS AND THE ROLE OF THE OTOLOGIST IN THE INDUSTRIAL NOISE PROBLEM

MEYER S. FOX, M.D.
MILWAUKEE, WISCONSIN

ALTHOUGH all states have some form of a Workmen's Compensation Law, the provisions covering occupational hearing loss vary in the several states and differ in interpretation even more so.

Some of the ways in which loss of hearing can be compensated are as follows:

1. As a scheduled award for a fixed number of weeks of compensation for either partial or total loss of hearing function
2. For loss of either wages or wage-earning capacity, rather than of hearing function
3. For loss of hearing function expressed in terms of the patient as a working unit; in other words, disability of the man as a whole
4. By means of a judgment at common law for damages

In spite of the various legal definitions and provisions, these are the facts. Intense industrial noise can and does cause hearing loss in susceptible workers. The degree and extent of these hearing losses are dependent upon numerous physical, acoustic, anatomic and physiologic factors, the influences of which are the same in all states. Therefore, the noise problem must be considered to be a national one.

Most states afford the workman compensation, in one form or another, for loss of hearing caused by the sudden accidental event. However, it is impossible at this time to give a complete list of states in which workers can recover for loss of hearing due to exposure to injurious noise. As stated previously, the laws of many states are subject to interpretation, and definite determination cannot be made until the courts of last resort in such states have interpreted their particular compensation acts. Opinions of the higher courts have been handed down in the states of New York, Missouri, and Wisconsin, and in the Federal Court in New York.

The greatest number of claims for alleged loss of hearing due to industrial noise exposure have arisen in the states of Wisconsin and New York. Because of the liberal provisions of the Wisconsin Act and the fact that partial and total

loss of hearing was compensated on a schedule basis, over five hundred claims for loss of hearing were filed before the Wisconsin Commission within a period of a few years (1951-1953). In the state of New York, an administrative ruling that awards should be deferred until the worker is removed from the injurious noise exposure for a period of six months has resulted in holding back awards for the time being. In the state of New Jersey, some 232 claims were filed against a shipbuilding industry. These later cases have been processed mostly under Federal Court and Longshoremen's and Harbor Workers' jurisdiction. In a recent decision, the United States Court of Appeals in New York held that gradual loss of hearing without loss of time or wages is compensable under the Longshoremen's and Harbor Workers' Compensation Act. This decision is similar to the decision rendered in the Wojcik case in Wisconsin. Some cases regarding hearing loss have also appeared in the states of Minnesota, California and Missouri. In Missouri, the situation at the present time is quiet, pending Supreme Court appeal as to the legality of the Missouri Commission rule number 23.

In addition, during the past year bills designed to remove barriers presently existing against recovery for partial loss of hearing have been introduced in numerous states.

With this increasing recognition of occupational hearing loss, national attention has been focused on the state of Wisconsin and its handling of the industrial noise problem. It will be recalled that Wisconsin introduced the nation's first effective state compensation law in May 1911, and it is probably fitting that the Workmen's Compensation Law of Wisconsin was recently amended to cover occupational hearing loss resulting from noise exposure. As far as I know, Wisconsin is the only state which has thus far passed specific legislation to deal with the industrial noise problem. These new amendments were agreed upon by the Commission's Advisory Committee on Workmen's Compensation Legislation, composed of representatives of labor, industry, insurance carriers, and the public. The new amendments, which became effective July 1, 1955, define occupational deafness and the industrial environment capable of producing it. A schedule has been provided for partial, as well as total, hearing loss. This schedule allows up to 32 weeks for compensation for total deafness of one ear, and 160 weeks for total deafness of both ears. In other words, the schedule is based on a ratio of 1:5 for monaural loss as compared to binaural loss. Employees may file claims for occupational loss of hearing six months after any of the following events:

1. Transfer because of occupational deafness to non-noisy environments
2. Retirement
3. Termination of employer-employee relationship
4. Layoff for one year, the last six months of which is away from injurious noise

You will notice that there is removal of the worker from the noisy area in all these conditions.

Hearing disability is to be determined on the basis of a formula recommended by the Medical Advisory Committee to the Wisconsin Industrial Commission. This Medical Advisory Committee consisted of four otologists and an industrial physician who were appointed by the Industrial Commission Advisory body to advise and guide them on the *medical aspects* of the industrial noise problem. In our deliberations, and prior to making final recommendations, we conferred with members of the Subcommittee on Noise in Industry of the Academy for guidance and advice. I

feel that these conferences helped us in formulating sound and sensible recommendations to our state Industrial Commission. It should be emphasized that the formula which we have recommended for determining hearing disability is *neither fixed nor rigid.* It is subject to change if and when a better method of measurement of loss of hearing is established.

One provision of the Wisconsin Act states:

> An employer will be liable for the entire occupational deafness to which his employment has contributed. However, if deafness previous to that which the employment has contributed is established by a hearing test or other competent evidence, the employer shall not be liable for such previous loss.

This points out the need for pre-employment pure-tone audiometric tests and consultation with otologists in supervising hearing conservation programs.

The otologist who has interested and prepared himself in the many facets of occupational hearing loss is well suited to play a key role in the industrial hearing-conservation program. As a result of his special training in the anatomy and function of the hearing mechanism and his practical experience in the diagnosis and treatment of various hearing defects, he has acquired the skill needed for the proper management of a sound and purposeful program. The informed otologist can offer realistic advice on such aspects of the industrial noise hazard as follows:

1. On the establishment of a practical program of hearing conservation to meet the needs of a particular plant

2. On the selection of a suitable room for conducting hearing tests in the industrial environment

3. On the selection of the audiometer and checking of its performance

4. On the instruction and guidance of plant personnel conducting the tests

5. On the establishment of valid history and audiometric records

6. On the evaluation of pre-employment and periodic hearing tests. (I would like to emphasize this point particularly. This is a medical function, primarily the responsibility of the otologist.)

7. On the placement of workers with impaired hearing

8. On the selection of and the use of ear-protective devices

9. On susceptibility of individual workers to occupational hearing loss

10. On the evaluation of the medico-legal aspects of hearing loss claims

On the basis of my own experiences, I urge more otologists to interest themselves and become active in the industrial noise problem. I also recommend and urge otologists who serve on advisory committees to their state medical societies or to the Compensation Board to use the services and information available from the Subcommittee on Noise in Industry of the Academy. A few of the many research studies now being conducted by the Subcommittee have been mentioned. There are both challenges and opportunities aplenty for us in this field, and time alone will tell whether we as otologists have been equal to them.

A MODIFIED CORNEAL TREPHINE

JOHN HARRY KING, JR., M.D.
WASHINGTON, D. C.

A SATISFACTORY trephine for performing keratoplasty should permit an accurate vertical cut in the corneal tissues without leaving beveled or sloping edges. The usual trephine handle is circular and is designed to be held by the thumb and index finger (or second finger), so that it can be rotated by moving the fingers back and forth. With such an instrument it is difficult to prevent some side-to-side motion or "wobbling" as the trephine is turned with one hand.

An older trephine (Gradle-Schiøtz) was designed to be supported by one hand and rotated by turning a cogged side-shaft with the other hand (fig. 1). This eliminates side-to-side motion and allows a straight-edged incision. The trephine blade on this instrument is made with an immovable guard, however, which limits the depth of the cutting edge to exactly 1 mm. This is a disadvantage in most instances in performing perforating keratoplasty, and it eliminates the use of the blade for nonperforating or lamellar corneal transplantation in which the depth cannot be regulated.

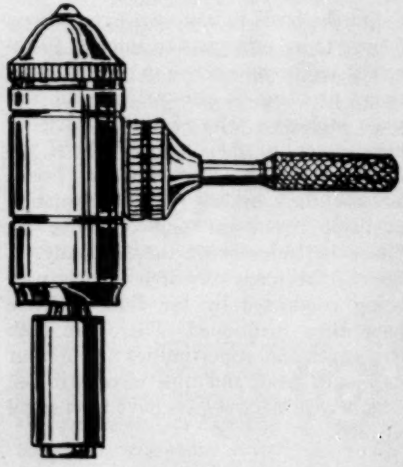

FIG. 1—Gradle-Schiøtz trephine with fixed 1 mm. guard.

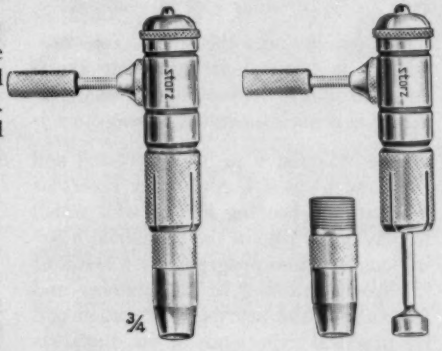

FIG. 2—Modified trephine with movable guard.

A combination of the Gradle-Schiøtz handle, to be supported by both hands, and a trephine blade with a movable guard offers the advantages of both trephines (fig. 2). It remains steady while the blade is turned and the blade can be adjusted to any depth for the penetrating or lamellar techniques. The side turning shaft can be either flexible or rigid.

This modified corneal trephine was made several years ago and has proved very useful in keratoplasty. The instrument is manufactured by Storz Instrument Company, St. Louis.

Presented as a *New Instrument* at the Sixtieth nual Session of the American Academy of Ophthalmology and Otolaryngology, Oct. 9-14, 1955, Chicago.

TRANSACTIONS

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All communications regarding the TRANSACTIONS should be addressed to William L. Benedict, M.D., Executive Secretary-Treasurer, American Academy of Ophthalmology and Otolaryngology, 100 First Avenue Building, Rochester, Minnesota

COUNCIL MINUTES

SIXTY-FIRST ANNUAL SESSION

October 14-19, 1956
Palmer House, Chicago

Present:

A. C. Furstenberg, Erling W. Hansen, M. Hayward Post, Henry L. Williams, Walter Atkinson, Frederick C. Cordes, Walter H. Theobald, Algernon B. Reese, William L. Benedict, Kenneth L. Roper, Lawrence R. Boies, A. D. Ruedemann, Dean M. Lierle, Daniel Snydacker, S. Rodman Irvine, Sam E. Roberts, Harold H. Joy, W. J. McNally.

The meeting was called to order at 10:00 a.m. by Dr. A. C. Furstenberg, President.

The Executive Secretary, Dr. William L. Benedict, gave the report of the Executive Secretary.

I

1. *Fellowship* (as of October 1, 1956)

Junior	5240
Senior	392
Life	421
Honorary	33
Inactive	89
	6175

2. *Candidates*

Complete	235
Incomplete	6
	241

3. *Deaths Reported Since Last Council Meeting*:

Adams, Charles Joseph .....Kokomo, Ind.
Allen, Thomas Dyer .....Evanston, Ill.
Baeseman, R. Winfield ....Allenhurst, N. J.
Barnett, Irving Francis .....Chicago, Ill.
Beyer, Louis J. .....Buffalo, N. Y.
Boeckmann, Egil .....St. Paul, Minn.
Bordley, James, Jr. .....Baltimore, Md.
Breakstone, Edgar O. .....Chicago, Ill.
Brown, John MacKenzie .Los Angeles, Calif.
Brunner, Hans .....Newark, N. J.
Bryan, James Leslie .....Nashville, Tenn.
Butt, Miriam M. .....Philadelphia, Pa.
Clement, Lucian Orville .....Salem, Ore.
Courtney, Robert Hull .....Richmond, Va.
Davidson, Herman Porter .....Chicago, Ill.
Defnet, William Anthony ....Detroit, Mich.
Donegan, Justin Martin .....Chicago, Ill.
Ewing, Fayette Clay .....Pineville, La.
Feaster, Henry Joseph .....Brooklyn, N. Y.
Fischer, Nathaniel Arthur ...Pittsburgh, Pa.
Flynn, James Lawrence .....Boston, Mass.
Friedenwald, Jonas S. .....Baltimore, Md.
Garlock, Arthur Varney .....Bemidji, Minn.
Gillum, John Randolph ...Terre Haute, Ind.
Gleason, John Edwin .....Detroit, Mich.
Goldcamp, Edward C. ....Youngstown, Ohio
Goldman, A. Milton .....Rockville Centre, L. I., N. Y.
Goodwin, Olin Mansell ....Fairmont, W. Va.
Haden, Henry C. .....Houston, Texas
Hall, Edwin Perry .....Oneonta, N. Y.
Harper, LaMar Blewett .....Yuma, Ariz.
Harris, Charles Morgan ....Philadelphia, Pa.
Harshman, Martin Luther ....Lafayette, Ind.
Hodsdon, Benjamin Franklin ...Jacksonville, Fla.

Hory, Joseph Stanton .....New York, N. Y.
Hughes, William F. .....Indianapolis, Ind.
Husik, David Nathaniel ....Philadelphia, Pa.
Hynes, Frank Joseph .....New York, N. Y.

Joynt, Martin John .....LeMars, Iowa

Kincaid, John H. .....Hollywood, Calif.
King, Edward Daniel ....North Hollywood, Calif.
Knapp, Arnold .....New York, N. Y.
Krebs, Adolph .....La Mesa, Calif.

Lamb, Robert Scott .....Washington, D. C.
Lehan, James W. .....Greeley, Colo.
Lester, Harry Summer .....Streator, Ill.
Levin, Bert O. .....St. Paul, Minn.

Mallon, Frank E. .....Brooklyn, N. Y.
McGuire, John .....Bluefield, W. Va.
Meissner, Tom O. W. .....Athens, Ga.
Morris, Samuel Archard .Los Angeles, Calif.
Muldoon, Wilfrid Edward ....San Antonio, Texas

Nairn, George Waverly .....Warsaw, N. Y.
Nutter, C. F. .....Nashua, N. H.

Osburn, John Nelson .....Corona del Mar, Calif.
Owsley, Robert Wright .....Arcadia, Calif.

Perdue, James Devote .....Mobile, Ala.

Reed, James Ross .....Pasadena, Calif.
Robbins, Clarence Edward ....Pierre, S. D.
Roberts, William Humes ....La Jolla, Calif.

Schugt, Henry Paul .....New York, N. Y.
Smith, James W. .....New York, N. Y.
Smith, William .....Hagerstown, Md.
Sputh, Carl Brosius, Sr. ..Indianapolis, Ind.

Taylor, H. Marshall .....Jacksonville, Fla.
Thompson, Peter Hunter .....Boston, Mass.
Tracht, Robert Russell .....St. Paul, Minn.

Weidlein, Evan Ford .....Cleveland, Ohio
Westlake, Samuel B. .....St. Louis, Mo.

Zehnder, A. Charles .....Newark, N. J.

4. *Resignations Received*:

Means, Russel Garrett .....Columbus, Ohio
McCart, Howard W. D. ....Toronto, Ont., Canada
Merwin, Thomas Keery ....La Jolla, Calif.
Ostrow, Irving .....Poughkeepsie, N. Y.
Parker, Ray .....Johnstown, Pa.
Snow, Harold L. .....Beverly Hills, Calif.
Whisnant, A. M. .....Charlotte, N. C.

5. *Requests for Inactive Status*:

Barney, Bernard B. .....Burlington, Vt.
Bowers, Berna Thomas .....Denver, Colo.
Buxton, Jorge Norman ....New York, N. Y.
Cecha, Albin Hastings ..Long Beach, Calif.
Decker, Philip Harold ....Williamsport, Pa.
Godwin, Dean Ely .....Long Beach, Calif.
Harley, Halvor Larson ..Atlantic City, N. J.
Heine, William Howard .....Fremont, Neb.
Houser, Karl Musser .....Philadelphia, Pa.
Marchman, Oscar Milton .....Dallas, Texas
Melton, Bernard L., Jr. .....Phoenix, Ariz.
Ornston, Darius Gray ....Philadelphia, Pa.
Sanders, John Levis .....Greenville, S. C.
Smith, Henry Buel .....Hempstead, N. Y.
Stitt, Howard Leigh .....Cincinnati, Ohio

6. Three Fellows were reported as delinquent in the payment of dues for a period of more than three years.

7. Report on the 1955-1956 Home Study Courses:

HOME STUDY COURSES

Report for 1955-1956
October 1956

The following is a record of registrations for the sixteen years the Home Study Courses have been offered by the Academy:

YEAR	OPHTHALMOLOGY	OTOLARYNGOLOGY	TOTAL
1940-1941	301	114	415
1941-1942	238	117	355
1942-1943	163	81	244
1943-1944	126	74	200
1944-1945	175	84	259
1945-1946	290	112	402
1946-1947	353	191	544
1947-1948	436	220	656
1948-1949	375	230	605
1949-1950	317	184	501
1950-1951	244	117	361
1951-1952	301	130	431
1952-1953	240	105	345
1953-1954	265	111	376
1954-1955	235	134	369
1955-1956	254	125	379
TOTALS	4,313	2,129	6,442

Registrations for 1956-1957 are incomplete. At present the enrollments for Ophthalmology are 257 and for Otolaryngology 148, total 405. This represents an increase over the same date last year of 20 for Ophthalmology (9 per cent) and 37 for Otolaryngology (34 per cent).

About two thirds of the registrants are residents: 64 per cent for Ophthalmology and 74 per cent for Otolaryngology.

FACULTIES

The following changes have been made in the Faculties during the past year:

New Appointments

For Ophthalmology: Bernard C. Gettes (Associate for Refraction); Samuel J. Kimura (Associate for External Diseases, Bacteriology and Virology); Joseph A. C. Wadsworth (Associate for Pathology).

For Otolaryngology: Donald H. Eldredge (Associate for Otological Acoustics); Norman Jesberg (Associate for Pathology).

Changes in Status

For Ophthalmology

Senior to Consultant: James H. Allen, Michael J. Hogan, John P. Macnie, Frank W. Newell.

Associate to Senior: Wm. Banks Anderson, Samuel N. Key, Jr., John S. McGavic, Manuel L. Stillerman.

For Otolaryngology

Senior to Consultant: Scott N. Reger.

Associate to Senior: Clair M. Kos.

PUBLICITY

The following methods and media are used to publicize the Home Study Courses:

Announcements in the specialty journals in the fields of Ophthalmology and Otolaryngology.

Bulletin Board Posters sent to the heads of departments of ophthalmology and otolaryngology in medical schools and in hospitals approved for residency training.

Announcements, editorials and news items in the Academy TRANSACTIONS.

Listing in the Postgraduate Courses issues of the Journal of the American Medical Association.

APPRECIATIONS

Formal, engraved notes of appreciation, signed by the President of the Academy, the Executive Secretary-Treasurer, and the two Secretaries for the Home Study Courses, are sent to persons who are not on the faculties who assist with the correcting and grading of examination papers.

FREE REGISTRATION FOR THE ACADEMY MEETING

Registrants for the 1955-1956 and 1956-1957 Home Study Courses have been offered free registration for the Academy Meeting this year.

DISCUSSION PERIODS

For several years Discussion Periods based on the Home Study Course in Ophthalmology have been offered as a part of the instruction course program, with the usual charge of $2.00 for each one-hour period. This year they are scheduled as a ten-hour continuous course, and all 1955-1956 registrants for the Home Study Course in Ophthalmology have been notified that complimentary tickets are available to them.

EXHIBITS

An exhibit on the Home Study Courses will be shown this year in Space S-4 on the Club Floor.

DANIEL SNYDACKER, M.D.
BEN H. SENTURIA, M.D.
Secretaries

8. The Joint Advisory Committee on Industrial Ophthalmology of the Section on Ophthalmology of the American Medical Association and the American Academy of Ophthalmology and Otolaryngology, proposed by Dr. Hedwig Kuhn, was established by action of the Council in October 1941. The Committee was discharged by action of the Section on Ophthalmology in June 1956. The Board of Trustees of the A.M.A. has authorized the appointment of an Advisory Committee on Industrial Ophthalmology by the Council on Industrial Health. The members of this Committee will be selected from the field of ophthalmology, rather than from any special group, and will function under the aegis of the Council. The Academy now has no appointee in the field of Industrial Ophthalmology. The Council on Industrial Health of the A.M.A. has suggested that the Academy, along with other ophthalmological groups, submit three names of ophthalmologists for consideration of the Council for appointment as advisor in Industrial Ophthalmology (see correspondence).

9. The Armed Forces Committee of the Academy has been inactive for several years and the chairman, Dr. M. Elliott Randolph has recommended that it be discontinued (see correspondence).

10. On January 20, 1956, the Indiana Interprofessional Committee on Eye Care (Dr. Carl J. Rudolph, South Bend, Indiana, Chairman) requested that the American Standards Association explore the feasibility of establishing standards for ophthalmic lenses of all types.

The American Standards Association called

a meeting of all interested parties in New York City on March 5, 1956, to discuss the request and, as a result, the A.S.A. initiated a project on Standards for Ophthalmic Lenses, Z80, under the Sectional Method of A.S.A. Procedure. The Optical Manufacturers Association was elected to serve as sponsor for this project. The Academy was one of thirty organizations and individuals invited to participate in a conference. Dr. Carl Rudolph and Dr. Arthur Linksz were appointed by Dr. Furstenberg to represent the American Academy of Ophthalmology and Otolaryngology at a meeting on March 5, 1956 (this appointment to be confirmed at the Council meeting). Doctor Linksz was unable to attend because of an injury. The meeting was attended by another Academy Fellow, Dr. Gerald Fonda, representing the Committee on Optics and Visual Physiology.

A report of this and subsequent meetings has been submitted to the Council. It is proposed that Doctor Rudolph and Doctor Linksz be appointed to represent the Academy on the Z80 Sectional Committee in 1957, and that alternates be Dr. Conrad Berens and Dr. Frank Newell.

11. The text of the Atlas of Slitlamp Gonioscopy by Lee Allen, Alson E. Braley, and others of the Department of Ophthalmology of the University of Iowa Medical School is now nearing completion. The color plates have been made and the book will go into production when the text and drawings are available for bids. At least three commercial publishers are interested in producing the Atlas, but contracts cannot be considered until estimates for production and distribution can be set up.

In 1953 the Council empowered the Secretary-Treasurer to proceed with the preparation and publication of an Atlas on Gonioscopy at an estimated cost of $23,000.00, said cost to be liquidated by sale of copies of the Atlas. Engraving of the color plates has been completed at a cost of $15,844.52. The black and white plates, tables, and text have not yet been completed.

12. A Committee on Eye Banks appointed by the Section on Ophthalmology of the American Medical Association has submitted a report recommending the formation of a Joint Committee on Eye Banks. The recommendation was adopted by the Section in June 1956. The Academy is asked to cooperate with the named societies in the formation of the Joint Committee and to appoint two representatives.

13. The Academy sponsors four different forms of insurance: (1) The Disability Accident and Sickness Program, with 1698 members insured as of December 1955. This has been increased by 97 for the first six months of 1956. All active members will be eligible for insurance, without exception, under this policy if and when 50 per cent of the members are insured. (2) The Polio Insurance Program was made available to the members in 1953. Up to July 1956, 574 members were insured under this program. (3) The Accidental Death and Dismemberment Plan was put into effect during this past year, and 297 members of the Academy are now carrying this coverage. (4) The insurance company has received 750 applications for malpractice coverage, and 346 members have been insured to date. The present rates for this insurance will be in effect until March of 1958. Some question has arisen in regard to the legality of this coverage in some states such as New York, Minnesota, and California, where Lloyds of London is not licensed to sell insurance. The Insurance Commissioner of each state is required to handle any complaint against an insurance company whether or not that company is licensed to sell insurance in that state. I believe we should do everything we can to encourage our members to take out this insurance under the Academy plan.

14. Incorporation of the Academy has been considered on several occasions, and as a result of opinions given by counsel, the Academy has remained an unincorporated association. At the meeting of the Council in 1955, acting on a suggestion from our certified public accountant, a committee was appointed to report on the advisability of incorporating. Your Secretary also sought legal counsel and engaged Mr. Leland Scott, of the firm of Dorsey, Owen, Barker, Scott, and Barber, Minneapolis, an attorney known as an expert in tax matters, to study the position of the Academy and render an opinion. After a thorough survey of Academy business and its present status as a tax exempt educational organization, Mr. Scott gave the following opinion: "In view of the fact that the Academy has operated for so many years in its present form without incurring liability for itself and its members, the fact that adequate protection against liability can be procured through insurance, and the further fact that by incorporating now the Academy will be required to again satisfy the Internal Revenue Service that it is exempt, it is my recommendation that the Academy continue with its present form of organization."

15. *The ad hoc Committee*: In October, 1953, the Council was asked to appoint a representative to the Board of Governors of the newly formed Associated Agency, and to appropriate $500.00 toward the support of the Agency (TRANSACTIONS, Nov.-Dec., 1953, page 927).

Dr. Alan C. Woods accepted the appointment on conditions that were to be worked out with the pro tem officers of the Agency. The appropriation was not granted. During the following two years the original Agency officers agreed to a reorganization of a plan proposed by the appointed representatives of the four national ophthalmological societies, the American Ophthalmological Society, the Section on Ophthalmology of the American Medical Association, the Association for Research in Ophthalmology, and the American Academy of Ophthalmology and Otolaryngology; these four constituting the ad hoc Committee. The ad hoc Committee has proposed that the committee known as the "National Committee for Research in Eye Diseases and Blindness" be discharged with thanks, and any assets of this committee be transferred to a new committee to be known as "The National Committee for Research in Ophthalmology and Blindness." It was suggested that the Academy appoint two Fellows to the Organizing Committee to be formed October 17, 1956, in Chicago. (The report of the ad hoc Committee is appended hereto.) The proposal was put to the members of the Council by mail vote, as Doctor Woods needed to be assured that the Academy would concur in the plan for a research grant in the Field Investigations Program, if it is accepted by the National Institute of Neurological Diseases and Blindness. There were 16 votes in favor, unqualified; and one qualified with reservations. Efforts are now being made by Doctor Woods to arrange with a pharmaceutical laboratory for the necessary biologic products. Application for a grant will be presented to the National Advisory Neurological Diseases and Blindness Council when the laboratory work can be assured.

Doctor Theobald moved that the report of the Executive Secretary be accepted as read. The motion was seconded by Doctor Roper and carried.

II

The Treasurer, Doctor Benedict, submitted the audit for 1955, made by Byers, Wobschall and Miller, Certified Public Accountants, and the financial status of the Academy as of September 30, 1956. (*The audit for* 1955 *appeared in the May-June* 1956 *issue of the* TRANSACTIONS. *The financial status of the Academy as of September* 30, 1956, *uncertified, is published herewith.*)

EXHIBIT "A"

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

Balance Sheet as of September 30, 1956

ASSETS

Current Assets:			
Cash on Hand		$ 25.00	
Cash in Banks:			
First National Bank of Rochester		43,152.38	
First National Bank of Minneapolis		3,990.82	
Bank of Montreal, Toronto, Canada		1,417.16	
Membership dues receivable, delinquent		1,358.00	
Accounts receivable, others		2,133.80	
Inventory, filmstrips, slides and publications		18,797.60	
Total current assets			$ 70,874.76
Investments:			
Educational fund	$206,813.68		
Wherry Memorial Lecture Fund	5,400.00	$212,213.68	
Plus: Advance in market values as of Dec. 31, 1955		36,376.26	248,589.94
Fixed Assets:			
Furniture and fixtures	$ 13,487.38		
Less: Reserve for depreciation	7,678.50	$ 5,808.88	
EMBRYOLOGY OF THE EAR motion picture project	$102,712.17		
Less: Reserve for depreciation	15,214.50	87,497.67	
EMBRYOLOGY OF THE EYE motion picture project	$ 40,900.00		
Less: Reserve for depreciation	27,180.00	13,720.00	107,026.55
Deferred Charges:			
Prepaid expenses		$ 415.25	
Prepaid insurance		189.83	
Prepaid postage		113.32	
ATLAS OF OTOLARYNGIC PATHOLOGY		41,738.36	
ATLAS OF SLIT-LAMP GONIOSCOPY		15,002.94	57,459.70
Total Assets			$483,950.95

LIABILITIES AND NET WORTH

Current Liabilities:			
Accounts payable		$ 4,609.20	
Accrued social security tax		107.92	
Accrued withholding tax		631.90	
Deferred income:			
Membership dues		155.00	
Advance payments—			
Bound Volumes and Manuals		3,426.00	$ 8,930.02
Undisbursed Funds from Special Contributions:			
Wherry Memorial Lecture Fund		$ 5,724.05	5,724.05
Net Worth:			
Surplus—January 1, 1956		$387,888.43	
Excess income over expenses—Year to date		81,408.45	469,296.88
Total Liabilities and Net Worth			$483,950.95

Doctor Cordes moved that the report of the Treasurer be accepted as read. Doctor Snydacker seconded the motion, which carried.

III

The report of the Editor of the TRANSACTIONS was read by Doctor Benedict, Editor-in-Chief, as follows:

For the period September 1, 1955, through August 31, 1956.

During the year just past, on an average, 7,678 copies of the TRANSACTIONS were printed bimonthly. Of these, 700 were set aside for bound volumes, and an average of 6,978 were mailed, an increase in circulation of 289 over last year. The following categories are represented:

Fellows	6,070
Candidates	127
Subscribers	452
Libraries	111
Exchange and Miscellaneous	64
Advertisers and Agents	57
Complimentary	40
Single copies	57

Six hundred and eighty-eight orders for the 1956 bound volume have been received to date.

The *revenue* from the TRANSACTIONS was as follows:

Subscriptions:	
Members	$38,916.00
Candidates	1,785.00
Non-members	4,811.00
Bound Volumes	3,153.50
Single Issues	85.50
Directory	79.00
American Orthoptic Journal	194.00
Advertising	19,891.72
Reprints	2,627.25
Total Revenue	$71,542.97

The *expenditures* for the TRANSACTIONS were as follows:

Bimonthly Issues	$35,316.89
Bound Volumes	1,538.74
Directory	4,657.53
American Orthoptic Journal	5,207.84
Cash Discounts Allowed	379.10
Supplies (stock and envelopes)	11,379.27
Freight and Express	44.32
General Expense	32.11
Postage	1,142.86
Reprints	3,260.12
Salaries	13,050.00
Social Security Tax	249.00
Total Expenses	$76,257.78
Expenses Over Revenue	$ 4,714.81

The past six issues have averaged 199 pages per issue, including news notes, directory of societies, committee reports, positions available, and miscellaneous notices. The Directory of Ophthalmologic and Otolaryngologic Societies is printed twice a year, in the May-June and the November-December issues.

The average number of pages of paid advertising was 33.6, representing 34 advertisers.

The sixth volume of the American Orthoptic Journal (Dr. William E. Krewson, III, editor) is now in press, and publication is expected this month. The first volume of this journal consisted of 55 pages. The next three volumes were all under one hundred pages. The fifth volume, published early this summer, contained 164 pages and cost as much as an issue of the Transactions. The sixth volume will contain 166 pages.

The Directory was published in June, with all names and addresses corrected to April 1.

The following manuals have been revised or reprinted during the past year:

Farrior: Radiographic Anatomy of the Temporal Bone

Pressman and Kelemen: Physiology of the Larynx

McNally and Stuart: Examination of the Labyrinth

Snydacker and Newell: Refraction

The manual on Ocular Surgery, extensively revised by Dr. Conrad Berens with the collaboration of Dr. John H. King, should be off the press within a month.

We are now editing an extensive revision of the manual on Nonsurgical Complications of Otolaryngological Surgery by Pressman, Acquarelli and Aronsohn, and a revised manuscript of Rucker's The Interpretation of Visual Fields.

IV

Old Business

1. At the 1955 Council meeting, the Council directed that a special committee be appointed by the President to study a resolution introduced by Dr. Alan C. Woods regarding a proposed change in the Constitution and By-Laws. Doctor Furstenberg appointed the following committee: Dr. Conrad Berens, Chairman, Dr. Frederick Cordes, Dr. James Milton Robb, Dr. Walter Theobald, and Dr. Derrick Vail.

REPORT OF COMMITTEE ON ETHICS

October 3, 1956

"After carefully considering changing the Code of Ethics of the American Academy of Ophthalmology and Otolaryngology, your Committee has reached the following conclusions:

"1. In light of the new "Principles of Ethics" which the American Medical Association in all likelihood will adopt at its Interim meeting in November, 1956, and because of the apparent divergence between the present "Principles of Ethics" of the American Medical Association and the American College of Surgeons concerning the dispensing of lenses and other matters, it seems in the best interest of the Academy to defer action at this time until we know with certainty what the final action of the American Medical Association will be.

"These recommendations were unanimously adopted by your Committee."

The recommendation for delay was occasioned by a report on June 1956, of the Reference Committee on Amendments to the Constitution and By-Laws of the A.M.A. "Your committee approves of the revision of the Principles of Medical Ethics as prepared by the Council on Constitution and By-Laws and endorsed by the Judicial Council. After considerable discussion and the appearance of interested parties, your committee approves of the revision of the Principles of Medical Ethics presented, and although the committee feels that the new version of the Principles is ready for action at this time, it recommends that final action be deferred until the next regular session of the House of Delegates to allow ample opportunity for thorough study on the part of members of the American Medical Association." (Proceedings of the Chicago meeting, June 11-15, 1956, J.A.M.A., Vol. 162, No. 5, September 29, 1956, pp. 504-505.)

2. Doctor Benedict reported that from January 1946 to September 1956, 50,482 manuals and 9,829 monographs were sold, a total of 60,311. He further reported that 59 prints of the film "Embryology of the Eye" have been sold and 11 prints of the film "Embryology of the Ear" have been sold. Doctor Benedict asked for a directive from the Council regarding a plan to offer the film on Embryology of the Ear for sale on an installment basis, since the cost of the film makes it prohibitive for most University budgets. Doctor Hansen moved that Doctor Benedict be given authorization to sell the film on Embryology of the Ear on an installment basis, and that a limit of $10,000.00 be set on such sales. Doctor Hansen further recommended that this plan be used with the sale of the film "Embryology of the Eye" if Doctor Benedict felt it was necessary. Doctor Lierle seconded this motion and it carried.

It was further suggested that alumni groups from the various medical schools which will be meeting in connection with the Academy meeting, might be contacted regarding the purchase of a film as a gift to their institutions and that the installment plan might be offered to them also, as an inducement. It was agreed that members of the Council would contact representatives of the various alumni groups and inform them of this plan.

V

Communications

1. Doctor Benedict reviewed correspondence from Doctor Snydacker regarding the E. C. Lientz Company, manufacturer of Hydrosulphosol, which is continuing to use names of members of the Academy as endorsers of its products. Dr. Ruedemann moved that this new evidence be referred to the Judicial Committee for survey. The motion was seconded by Doctor Irvine and carried.

2. A communication from Dr. Harold Falls asking whether the Academy would be interested in sponsoring in part a motion picture on The Eye as an Aid to Diagnosis of Systemic Disease. This film would be produced by the Medical Film Guild. Doctor Lierle recommended that this proposal be referred to the Committee on Audio-Visual Education for consideration. The motion was seconded and carried.

3. A communication from Dr. Everett L. Goar was read, in which he spoke of the work being done by a Committee on Public Relations, Section on Ophthalmology of the A.M.A., headed by Dr. Ralph Rychener. Doctor Goar felt that the Academy, the American Ophthalmological Society, and the Association for Research in Ophthalmology should get behind this movement. Doctor Hansen pointed out to the Council that it had been the policy of the Academy for many years to insist that we are an educational and instructional body and that we should stay clear of any problems with political implications.

It was recommended that Doctor Rychener be allowed to appear before the Council to inform them of actions being taken by his committee. Note: In the afternoon session Doctor Rychener appeared before the Council and requested that he be allowed to speak before any ophthalmologists who cared to stay after the Wednesday morning session of the

Academy had been adjourned. This permission was granted with the understanding that this would not be considered in any way as a part of the Academy meeting.

4. A communication requesting the Academy to send a representative to the meeting of the American Academy of Cerebral Palsy was referred to Doctor Furstenberg, who felt that it was not necessary to appoint a representative. Doctor Hansen moved that the Council approve the action of the President. Doctor Lierle seconded the motion and it carried.

5. A Committee on Eye Banks appointed by the Section of Ophthalmology of the American Medical Association submitted a report with a recommendation for the formation of a Joint Committee on Eye Banks. This recommendation was adopted by the Section in June 1956. A copy of this report was transmitted to the Secretary of the Academy with a covering letter dated June 15, 1956, by the Secretary of the Section, Dr. Harold G. Scheie. The Council approved the appointment of Dr. Alson E. Braley and Dr. John H. King, Jr., as Academy representatives to the Joint Committee on Eye Banks.

6. A communication was read from Dr. Gerald Fonda, Secretary of the Committee on Optics and Visual Physiology, asking for a $1,000.00 research grant for study of color vision. The Executive Secretary was instructed to answer this communication, stating that according to the present By-Laws of the Academy we are not permitted to engage in such a project.

7. In regard to communications received regarding the abolition of a Joint Committee on Industrial Ophthalmology, it was agreed that the subject of an Academy-sponsored committee on industrial ophthalmology should lie dormant this year. It was further agreed that any participation in the committee sponsored by the Council on Industrial Health should be discouraged.

8. A communication was read from Mr. John Behnke of the American Association for the Advancement of Science asking for the reaction of the Council to a plan for underwriting the expenses of representatives of societies attending the American Association for the Advancement of Science meetings. Doctor Hansen stated that he felt there was no reason why any action should be taken. The Council agreed.

9. A communication from Lester R. Dragstedt, M.D., President of the National Society for Medical Research, requesting continued support of the Academy for his organization was referred to the Committee on Appropriations of the Executive, Research and Finance Committee.

10. The recommendation of Dr. M. Elliott Randolph, Chairman of the Armed Forces Committee of the Academy, recommending that this Committee be discontinued was read. This recommendation was referred to the Executive, Research, and Finance Committee.

11. A communication was read from Dr. C. S. Damel, President of the VI Congreso Argentino De Oftalmologia, requesting an appointment of a delegate to that meeting. It was left to the discretion of the Executive Secretary-Treasurer to give the official sanction of the Academy to some member who planned to attend the Congress.

12. A communication was read from the Director of the Pan-American Association of Ophthalmology requesting the reappointment of Dr. W. L. Benedict as a delegate to the Council of the Pan-American Association of Ophthalmology for a period of four years. Doctor Snydacker made a motion that Doctor Benedict continue to serve in this capacity. The motion was seconded by Doctor Hansen and was carried by unanimous vote.

VI

Report of the Executive, Research and Finance Committee—Dr. A. C. Furstenberg, Chairman.

1. The Committee recommends that the application fee continue to be $25.00 and that the annual dues for Junior Fellows shall be $20.00; for Senior Fellows, $10.00. The allotment from dues and from application fees for subscriptions to the TRANSACTIONS shall be continued at $7.00.

Doctor Roper moved that this recommendation be accepted. The motion was seconded and carried.

2. The Committee recommends that the three fellows who have been delinquent in the payment of dues for a period of more than three years be dropped from the Academy roster.

Doctor Roper moved that this recommendation be approved. The motion was seconded and carried.

3. The Committee recommends the following appointments to Standing and Joint Committees:

To the Committee on Conservation of Hearing, Dr. Dean M. Lierle, Chairman

To the Committee on Ophthalmic Pathology, Dr. Michael J. Hogan, Chairman

To the Committee on Otolaryngic Pathology, Dr. Paul H. Holinger, Chairman

To the Committee on Pan-American Relations in Ophthalmology, Dr. Conrad Berens, Chairman

To the Committee on Pan-American Relations in Otolaryngology, Dr. C. L. Jackson, Chairman; Dr. Victor R. Alfaro, Dr. Norton Canfield, Dr. John Marquis Converse, Dr. Jose Conrad Gros, Dr. Paul H. Holinger, Dr. Howard P. House, Dr. Carlos Munoz-MacCormick, Dr. William J. McNally, Dr. LeRoy A. Schall, Dr. Theodore E. Walsh.

To the Committee on Scientific Exhibits, Dr. Kenneth L. Roper and Dr. Eugene L. Derlacki, Co-Chairmen

To the Committee on Standardization of Tonometers, Dr. Peter C. Kronfeld, Chairman

To the Committee on Audio-Visual Education, Dr. Dean M. Lierle, Chairman

To the Teachers' Section: Otolaryngology, Dr. Gordon D. Hoople, Chairman

To the Teachers' Section: Ophthalmology, Dr. A. D. Ruedemann, Chairman

Representatives to:

American Association for the Advancement of Science, Dr. M. Elliott Randolph.

American Board of Ophthalmology, Dr. Alson E. Braley, reappointed for a four-year term beginning January 1, 1957.

American Board of Otolaryngology, Dr. Francis E. LeJeune and Dr. George F. Reed.

American College of Surgeons Board of Governors, Dr. Ralph O. Rychener, Dr. John G. Beall, Dr. James V. Bolger, nominees. These three names will be presented to the College, which will appoint one for a three-year term ending in 1960.

American Committee on Optics and Visual Physiology, Dr. James E. Lebensohn, reappointed for a three-year term beginning January 1, 1957.

American Orthoptic Council, Dr. Philip Knapp, reappointed for a three-year term beginning January 1, 1957.

American Standards Association, Acoustical Standards Board, Dr. Gordon D. Hoople.

American Standards Association, Z80 Project (Standardization of Ophthalmic Lenses), Dr. Carl J. Rudolph and Dr. Arthur C. Linksz. Alternates, Dr. Conrad Berens and Dr. Frank Newell.

National Society for Crippled Children and Adults, Inc., Dr. Dean M. Lierle.

It was recommended by the Chairman of the Armed Forces Committee and the Committee on Prevention of Blindness that these Committees be discontinued as Standing Committees of the Academy.

Doctor Snydacker moved that the recommendations of the Committee be accepted. The motion was seconded and carried.

4. The Committee recommends the nomination of Dr. William L. Benedict as Editor-in-Chief of the TRANSACTIONS.

A motion to approve the recommendation was seconded and carried.

5. The Committee recommends that the next annual meeting of the Academy be held October 13-18, 1957, at the Palmer House in Chicago.

The recommendation was approved by Council vote.

6. The Committee recommends the following appropriations for the calendar year 1957:

To the Committee on Conservation of Hearing, a sum not to exceed $14,500; $7,500 to be earmarked for the Sub-Committee on Noise in Industry to be used for educational purposes; and the balance $7,000 to be used by the General Committee and the other subcommittees.

To the Committee on Standardization of Tonometers, $1,000.

To the American Committee on Optics and Visual Physiology, $200.

To the American Orthoptic Council, $100.

To the International Federation of Ophthalmological Societies, $300.

To the National Society for Medical Research, $1,000.

To the VI International Congress of Otolaryngology, $500.

Each of these appropriations was approved by the Council.

A motion was made to accept the report of the Committee as a whole. The motion was put to a vote and carried.

VII

Report of the Activities Committee—Dr. S. Rodman Irvine, Chairman.

Reports of the following committees were reviewed and approved by the Committee:

Armed Forces Committee
Conservation of Hearing Committee
Committee on Ophthalmic Pathology
Committee on Otolaryngic Pathology
Committee on Pan-American Relations in Ophthalmology
Committee on Prevention of Blindness
Committee on Scientific Exhibits
Committee on Standardization of Tonometers
Committee on Audio-Visual Education

No report was received from the Committee on Pan-American Relations in Otolaryngology.

The following reports from representatives of the Academy to other organizations and to Joint Committees were reviewed and approved:

American Association for the Advancement of Science

American Board of Ophthalmology

American Board of Otolaryngology

American College of Surgeons Board of Governors

American Committee on Optics and Visual Physiology

American Standards Association, Ophthalmic Lenses

A motion was made that the report of the Committee be accepted. The motion was seconded and carried.

VIII

Report of the Board of Councillors—Dr. S. Rodman Irvine, Chairman.

1. The Board of Councillors recommends that 235 candidates who have fulfilled the requirements for membership be accepted for Fellowship in the Academy.

The Board further recommends that action on six candidates be withheld until they have completed the requirements for membership or until further information has been secured.

2. The Board of Councillors nominates the following officers:

President: Dr. Erling W. Hansen, Minneapolis

President-Elect: Dr. LeRoy Schall, Boston

First Vice-President: Dr. Louis Clerf, St. Petersburg, Florida

Second Vice-President: Dr. David Harrington, San Francisco

Third Vice-President: Dr. O. E. Van Alyea, Chicago

Councillor: Dr. Victor Byrnes, Washington, D. C.

Executive Secretary-Treasurer: Dr. William L. Benedict, Rochester, Minnesota

It was moved that the nominations of the Board of Councillors to offices in the Academy be accepted. The motion was seconded and carried.

Doctor Cordes moved that the entire report of the Board of Councillors be accepted. The motion was seconded and carried.

X

New Business

1. Doctors Lee Goss, Homer Smith, Paul Case and Lester Jones, representing the Pacific Coast Oto-Ophthalmological Society, appeared before the Council and offered an invitation to the Academy to meet in California in the near future at a time to be decided by the Academy itself. Following a discussion by the Council, the Executive Secretary was authorized to write a letter to the Pacific Coast Oto-Ophthalmological Society thanking them for their invitation and assuring them that it would be given due consideration; and to tell them that a definite commitment for the annual meeting cannot be made more than one year in advance.

2. Dr. Alan C. Woods appeared before the Council to inform them regarding steps which had been taken by the *ad hoc* Committee on research in ophthalmology regarding a research project on uveitis on a national scale. An application for grant will be made from the National Institutes of Health, and an attempt will be made to make arrangements with a pharmaceutical concern to supply the necessary drugs.

3. A request to approve the formation of a National Committee on Research in Ophthalmology and Blindness was approved by Council action, and Dr. Bernard Becker and Dr. Alfred E. Maumenee were made Academy representatives. "It was requested contingent upon the approval of the Committee that each of the parent societies be asked to contribute $500.00 each to the initial expenses of the committee. It is believed that future expenses will be met by a research grant from the National Institutes of Health. Therefore, it is respectfully requested that the American Academy of Ophthalmology and Otolaryngology appropriate the sum of $500.00 to the National Committee on Research in Ophthalmology and Blindness." Representing other societies were: A. D. Ruedemann, M.D., and Michael J. Hogan, M.D., Section on Ophthalmology of the A.M.A.; Alson E. Braley, M.D., and David Cogan, M.D., American Ophthalmological Society; Irving H. Leopold, M.D. and Frank W. Newell, Secretary, Association on Research in Ophthalmology.

4. At the Wednesday meeting a report was submitted by a Committee appointed by Doctor Furstenberg on Saturday to draw up a possible revision of the Constitution and By-Laws of the American Academy of Ophthalmology and Otolaryngology:

"To revise Article III, Members and Fellows, of the Constitution, inserting after 'Active Fellows' and before 'and Honorary Fellows' the words 'Associate Fellows'.

After Section (b) of Article III inserting a new Section (c) to cover Associate Fellows, as follows:

(c) Associate Fellows

Associate Fellows may be elected from persons in fields allied to Ophthalmology and Otolaryngology who are not eligible to other fellowship classifications and who are proposed by two Active Fellows, approved by the Council, and have a three-fourths affirmative vote of all Fellows present at the Annual Meeting. This revision necessitates changing the present Section (c) to Section (d), and the present Section (d) to Section (e).

To revise Article V, Section 6, of the By-Laws, inserting after the first paragraph *in re* Honorary Fellows, a paragraph to read:

Associate Fellows shall not pay dues, and they shall not be eligible to vote or to hold office."

Doctor Roberts made a motion that the report of the Committee be accepted as read except that the last paragraph be changed to: "Associate Fellows shall pay dues equal to one-half the dues of Junior Fellows, they shall not be eligible to vote or to hold office, and they shall receive the TRANSACTIONS.

Doctor Roper moved that the Academy members who sponsored the various men for honorary membership in the Academy be notified of the probable change in the Constitution and By-Laws and that these men will be eligible for Associate membership in the Academy if they wish to apply after the amendment is put into effect.

Doctor Hansen seconded the motion and it was carried.

5. The Executive Secretary-Treasurer read a request from Dr. Richard Troutman representing a group interested in implant techniques that the Academy sponsor a Committee on Implants and Implant Techniques:

"On Tuesday morning October 18 a group of interested ophthalmologists and eyemakers met at breakfast to discuss the problems concerned in setting up a committee on implants, prosthetics and implant techniques. The discussion which ensued brought more or less general agreement on the following points or aims of such a committee.

"(1) To suggest on the basis of the experience of those interested persons basic principles to aid in the orderly development of implants and implant techniques, prostheses, etc.

"(2) To offer suggestions and help to ophthalmologists and eyemakers who wish to develop new ideas in implants, etc., to prevent needless and time wasting reduplication, and to try to develop promising ideas and techniques more rapidly than is possible for the individual surgeon or eyemaker to do. Meanwhile preserving all ethical credit for the idea or technique for the man involved.

"(3) To develop research in the materials and methods used in the manufacture of implants and prosthetics and to help the manufacturers incorporate these in implants.

"(4) To compile bibliographical surveys of surgical procedures and implants to be made available through the Academy.

"(5) To aid in the establishment of an educational program designed to improve the standards of the care and fitting of the enucleated or eviscerated socket.

"We respectfully suggest to the Council that this committee be set up initially under the auspices of the Academy only, until these problems can be better formulated. We also suggest that the committee be composed not only of members who have particular interest in the field of implants but of additional representatives with experience in related fields of ophthalmology and a representative from the National Institutes of Health."

The formation of a standing committee was approved by Council action and Dr. A. D. Ruedemann was named as Chairman of the new "Committee on Implants and Implant Techniques."

6. Doctor Benedict nominated for Secretaries the following men:

Kenneth L. Roper, Secretary for Ophthalmology

Eugene L. Derlacki, Secretary for Otolaryngology

A. D. Ruedemann, Secretary for Instruction in Ophthalmology

Dean M. Lierle, Secretary for Instruction in Otolaryngology

Daniel Snydacker, Secretary for Home Study Courses

Glen Gibson, Secretary for Public Relations

These nominations were approved by Council action.

Since no further business was brought before the Council the meeting adjourned *sine die*.

PAST OFFICERS OF THE ACADEMY

Date	President	First Vice-President	Treasurer	Secretary	Meeting Place
1896	Adolph Alt St. Louis, Mo.	W. C. Pipino Des Moines, Iowa	W. L. Dayton Lincoln, Neb.	Hal Foster Kansas City, Mo.	Kansas City, Mo.
1897	Adolph Alt St. Louis, Mo.	W. C. Pipino Des Moines, Iowa	W. L. Dayton Lincoln, Neb.	Hal Foster Kansas City, Mo.	St. Louis
1898	B. E. Fryer Kansas City, Mo.	J. E. Colburn Chicago, Ill.	W. L. Dayton Lincoln, Neb.	Hal Foster Kansas City, Mo.	Chicago
1899	J. E. Colburn Chicago, Ill.	W. Scheppegrell St. Louis, Mo.	W. L. Dayton Lincoln, Neb.	Thomas A. Woodruff Chicago, Ill.	New Orleans
1900	W. Scheppegrell St. Louis, Mo.	M. A. Goldstein St. Louis, Mo.	W. L. Dayton Lincoln, Neb.	Fayette C. Ewing St. Louis, Mo.	St. Louis
1901	M. A. Goldstein St. Louis, Mo.	H. W. Wurdemann Milwaukee, Wis.	W. L. Dayton Lincoln, Neb.	W. L. Ballenger Chicago, Ill.	Cincinnati
1902	C. R. Holmes Cincinnati, Ohio	W. L. Dayton Lincoln, Neb.	Otto Stein Chicago, Ill.	W. L. Ballenger Chicago, Ill.	Chicago
1903	W. L. Ballenger Chicago, Ill.	C. J. Stillson Indianapolis, Ind.	Otto Stein Chicago, Ill.	Derrick Vail Cincinnati, Ohio	Indianapolis
1904	Edward Jackson Denver, Colo.	Dudley Reynolds Louisville, Ky.	Otto Stein Chicago, Ill.	Derrick Vail Cincinnati, Ohio	Denver
1905	Hanau Loeb St. Louis, Mo.	Derrick Vail Cincinnati, Ohio	Otto Stein Chicago, Ill.	George F. Suker Chicago, Ill.	Buffalo
1906	Casey Wood Chicago, Ill.	J. A. Stucky Lexington, Ky.	Otto Stein Chicago, Ill.	George F. Suker Chicago, Ill.	St. Clair, Mich.

PAST OFFICERS OF THE ACADEMY

Date	President	First Vice-President	Treasurer	Secretary	Meeting Place
1907—	J. A. Stucky Lexington, Ky.	R. A. Reeve Toronto, Canada	Otto Stein Chicago, Ill.	George F. Suker Chicago, Ill.	Louisville
1908—	Derrick Vail Cincinnati, Ohio	Joseph Beck Chicago, Ill.	Otto Stein Chicago, Ill.	George F. Suker Chicago, Ill.	Cleveland
1909—	Otto Stein Chicago, Ill.	Percy Fridenberg New York, N. Y.	S. H. Large Cleveland, Ohio	George F. Suker Chicago, Ill.	New York
1910—	Wendell Reber Philadelphia, Pa.	L. B. Lockhard Denver, Colo.	S. H. Large Cleveland, Ohio	George F. Suker Chicago, Ill.	Cincinnati
1911—	J. J. Kyle Indianapolis, Ind.	F. Parke Lewis Buffalo, N. Y.	S. H. Large Cleveland, Ohio	George F. Suker Chicago, Ill.	Indianapolis
1912—	George F. Suker Chicago, Ill.	J. W. Murphy Cincinnati, Ohio	S. H. Large Cleveland, Ohio	L. M. Francis Buffalo, N. Y.	Niagara Falls, Ont.
1913—	J. W. Murphy Cincinnati, Ohio	J. O. McReynolds Dallas, Texas	S. H. Large Cleveland, Ohio	L. M. Francis Buffalo, N. Y.	Chattanooga
1914—	J. M. Ray Louisville, Ky.	J. M. Ingersoll Cleveland, Ohio	S. H. Large Cleveland, Ohio	L. M. Francis Buffalo, N. Y.	Boston
1915—	Joseph Beck Chicago, Ill.	Robert S. Lamb Washington, D.C.	S. H. Large Cleveland, Ohio	L. M. Francis Buffalo, N. Y.	Chicago
1916—	J. E. Brown Columbus, Ohio	T. E. Carmody Denver, Colo.	S. H. Large Cleveland, Ohio	L. M. Francis Buffalo, N. Y.	Memphis
1917—	W. L. Dayton Lincoln, Neb.	Edward Stieren Pittsburgh, Pa.	S. H. Large Cleveland, Ohio	L. M. Francis Buffalo, N. Y.	Pittsburgh
1918—	Allen Greenwood Boston, Mass.	Virginius Dabney Washington, D.C.	S. H. Large Cleveland, Ohio	L. M. Francis Buffalo, N. Y.	Denver

PAST OFFICERS OF THE ACADEMY

Date	President	First Vice-President	Treasurer	Secretary	Meeting Place
1919—	J. M. Ingersoll Cleveland, Ohio	Melville M. Black Denver, Colo.	S. H. Large Cleveland, Ohio	Luther C. Peter Philadelphia, Pa.	Cleveland
1920—	L. M. Francis Buffalo, N. Y.	Hal Foster Kansas City, Mo.	S. H. Large Cleveland, Ohio	Luther C. Peter Philadelphia, Pa.	Kansas City, Mo.
1921—	Emil Mayer New York, N. Y.	John R. Newcomb Indianapolis, Ind.	S. H. Large Cleveland, Ohio	Luther C. Peter Philadelphia, Pa.	Philadelphia
1922—	Walter R. Parker Detroit, Mich.	Ross H. Skillern Philadelphia, Pa.	S. H. Large Cleveland, Ohio	Luther C. Peter Philadelphia, Pa.	Minneapolis and St. Paul
1923—	T. E. Carmody Denver, Colo.	Hunter H. McGuire Winchester, Va.	S. H. Large Cleveland, Ohio	Luther C. Peter Philadelphia, Pa.	Washington, D. C.
1924—	W. B. Lancaster Boston, Mass.	William P. Wherry Omaha, Neb.	S. H. Large Cleveland, Ohio	Luther C. Peter Philadelphia, Pa.	Montreal
1925—	Horace Newhart Minneapolis, Minn.	John M. Wheeler New York, N. Y.	S. H. Large Cleveland, Ohio	Luther C. Peter Philadelphia, Pa.	Chicago
1926—	E. C. Ellett Memphis, Tenn.	Austin A. Hayden Chicago, Ill.	S. H. Large Cleveland, Ohio	Luther C. Peter Philadelphia, Pa.	Colorado Springs
1927—	Ross Hall Skillern Philadelphia, Pa.	H. W. Woodruff Joliet, Ill.	S. H. Large Cleveland, Ohio	William P. Wherry Omaha, Neb.	Detroit
1928—	Luther C. Peter Philadelphia, Pa.	Frank L. Dennis Colorado Springs, Colo.	S. H. Large Cleveland, Ohio	William P. Wherry Omaha, Neb.	St. Louis
1929—	Harris P. Mosher Boston, Mass.	Frank E. Burch St. Paul, Minn.	S. H. Large Cleveland, Ohio	William P. Wherry Omaha, Neb.	Atlantic City
1930—	William H. Wilder Chicago, Ill.	Frank R. Spencer Boulder, Colo.	S. H. Large Cleveland, Ohio	William P. Wherry Omaha, Neb.	Chicago

PAST OFFICERS OF THE ACADEMY

Date	President	First Vice-President	Ex. Sec'y-Treas.	Comptroller	Meeting Place
1931—	John F. Barnhill Miami Beach, Fla.	Meyer Wiener Coronado, Calif.	William P. Wherry Omaha, Neb.	S. H. Large Cleveland, Ohio	French Lick, Ind.
1932—	S. Hanford McKee Montreal, Canada	Gordon B. New Rochester, Minn.	William P. Wherry Omaha, Neb.	S. H. Large Cleveland, Ohio	Montreal
1933—	Burt R. Shurly Detroit, Mich.	Nelson Miles Black Miami, Fla.	William P. Wherry Omaha, Neb.	S. H. Large Cleveland, Ohio	Boston
1934—	John M. Wheeler New York, N. Y.	LeRoy A. Schall Boston, Mass.	William P. Wherry Omaha, Neb.	S. H. Large Cleveland, Ohio	Chicago
1935—	Wells P. Eagleton Newark, N. J.	W. Thornwall Davis Washington, D.C.	William P. Wherry Omaha, Neb.	S. H. Large Cleveland, Ohio	Cincinnati
1936—	Frank E. Burch St. Paul, Minn.	Gordon F. Harkness Davenport, Iowa	William P. Wherry Omaha, Neb.	S. H. Large Cleveland, Ohio	New York
1937—	Lee W. Dean St. Louis, Mo.	Bernard Samuels New York, N. Y.	William P. Wherry Omaha, Neb.	S. H. Large Cleveland, Ohio	Chicago
1938—	Harry S. Gradle Chicago, Ill.	E. M. Seydell Wichita, Kan.	William P. Wherry Omaha, Neb.	S. H. Large Cleveland, Ohio	Washington, D. C.
1939—	George M. Coates Philadelphia, Pa.	William W. Pearson Des Moines, Iowa	William P. Wherry Omaha, Neb.	S. H. Large Cleveland, Ohio	Chicago
1940—	Frank E. Brawley Chicago, Ill.	Arthur W. Proetz St. Louis, Mo.	William P. Wherry Omaha, Neb.	S. H. Large Cleveland, Ohio	Cleveland
1941—	Frank R. Spencer Boulder, Colo.	Everett L. Goar Houston, Texas	William P. Wherry Omaha, Neb.	S. H. Large Cleveland, Ohio	Chicago
1942—	Ralph I. Lloyd Brooklyn, N. Y.	Walter H. Theobald Chicago, Ill.	William L. Benedict Rochester, Minn.	S. H. Large Cleveland, Ohio	Chicago
1943—	James A. Babbitt Philadelphia, Pa.	Sanford R. Gifford Chicago, Ill.	William L. Benedict Rochester, Minn.	S. H. Large Cleveland, Ohio	Chicago

PAST OFFICERS OF THE ACADEMY

Date	President	First Vice-President	Ex. Sec'y-Treas.	Meeting Place
1944—	Lawrence T. Post St. Louis, Mo.	C. Stewart Nash Rochester, N. Y.	William L. Benedict Rochester, Minn.	Chicago
1945—	Gordon B. New Rochester, Minn.	Edmund B. Spaeth Philadelphia, Pa.	William L. Benedict Rochester, Minn.	Meeting Cancelled
1946—	Gordon B. New Rochester, Minn.	Edmund B. Spaeth Philadelphia, Pa.	William L. Benedict Rochester, Minn.	Chicago
1947—	Alan C. Woods Baltimore, Md.	Arthur C. Jones Boise, Idaho	William L. Benedict Rochester, Minn.	Chicago
1948—	Carl H. McCaskey Indianapolis, Ind.	Ralph O. Rychener Memphis, Tenn.	William L. Benedict Rochester, Minn.	Chicago
1949—	Conrad Berens New York, N. Y.	Fred W. Dixon Cleveland, Ohio	William L. Benedict Rochester, Minn	Chicago
1950—	J. Mackenzie Brown Los Angeles, Calif.	Edwin B. Dunphy Boston, Mass.	William L. Benedict Rochester, Minn.	Chicago
1951—	Derrick Vail Chicago, Ill.	Francis E. LeJeune New Orleans, La.	William L. Benedict Rochester, Minn.	Chicago
1952—	James Milton Robb Detroit, Mich.	Georgiana Dvorak Theobald Oak Park, Ill.	William L. Benedict Rochester, Minn.	Chicago
1953—	Frederick C. Cordes San Francisco, Calif.	Thomas C. Galloway Evanston, Ill.	William L. Benedict Rochester, Minn.	Chicago
1954—	Walter H. Theobald Chicago, Ill.	Francis Heed Adler Philadelphia, Pa.	William L. Benedict Rochester, Minn.	New York
1955—	Algernon B. Reese New York, N. Y.	Philip E. Meltzer Boston, Mass.	William L. Benedict Rochester, Minn.	Chicago
1956—	A. C. Furstenberg Ann Arbor, Mich.	M. Hayward Post St. Louis, Mo.	William L. Benedict Rochester, Minn.	Chicago

ANNUAL BUSINESS MEETING

The business meeting of the Sixty-First Annual Session of the American Academy of Ophthalmology and Otolaryngology, held at the Palmer House, Chicago, Illinois, Thursday afternoon, October 18, 1956, convened at 5:45 o'clock, Dr. A. C. Furstenberg, President of the Academy, presiding.

PRESIDENT FURSTENBERG: Will the meeting please come to order?

The first item on the agenda is the report of the Executive Secretary, Dr. William L. Benedict.

Report of the Executive Secretary, Dr. William L. Benedict:

Fellowship of the Academy on October 1, 1956:

Junior Fellows	5,240
Senior Fellows	392
Life Fellows	421
Honorary Fellows	33
Inactive Fellows	89
Total membership	6,175

There are 235 candidates to be considered at this meeting who have been approved by the Council.

Deaths reported since the last meeting, 70; resignations accepted, 7; reclassification as Inactive Fellows, 14; dropped for nonpayment of dues, 3.

Mr. President, I move the acceptance of this report.

The motion was seconded by Dr. Kenneth L. Roper and carried.

Report of the Treasurer, Doctor Benedict:

The audit for 1955, made by Byers, Wobschall and Miller, Certified Public Accountants, was published in the May-June 1956 issue of the TRANSACTIONS. Supplementing that audit, the financial status of the Academy as of September 30, 1956 was as follows:

Total current assets: $70,874.76.

Under the category of investments: The Educational Fund amounts to $206,813.68, and in the Wherry Memorial Lecture Fund there is $5,400, making a total of $212,213.68, plus an advance in market values as of December 31, 1955, of $36,376.26, making our total educational fund together with the Wherry Memorial Lecture Fund, $248,589.94.

Fixed assets include furniture and fixtures, less reserve for depreciation, $5,808.88; the motion picture Embryology of the Ear, less reserve for depreciation, $87,498.67; the motion picture Embryology of the Eye, $13,720. (These motion pictures are amortized at the rates of 10 per cent a year.) Total fixed assets: $107,026.55.

Deferred charges including prepaid expenses, prepaid insurance, prepaid postage, and the Atlases of Otolaryngic Pathology and Slit Lamp Gonioscopy, total $57,459.70.

Total assets: $483,950.95.

Liabilities: Accounts payable, $4,609.20; accrued social security tax, $107.92; accrued withholding tax, $631.90; deferred income from membership dues and advance payments, $3,581. Total liabilities: $8,930.02.

Undisbursed, Wherry Memorial Lecture Fund: $5,724.05.

Net worth: $469,296.88.

Total Liabilities and Net Worth: $483,950.95.

Mr. President, I move acceptance of this report.

The motion was seconded by Dr. Daniel Snydacker and carried.

PRESIDENT FURSTENBERG: We shall now have the report of the Senior Member of the Council, Dr. Frederick Cordes.

Report of the Senior Member of the Council:

Mr. President and Members of the Academy: The Council has received and approved the reports of the Secretary-Treasurer, the Editor of the TRANSACTIONS, the Council Committees, and joint and standing committees. These reports will be published in the November-December 1956 issue of the TRANSACTIONS.

The Council recommends that the application fee for fellowship in the Academy shall remain at $25; the annual dues for Junior Fellows at $20; for Senior Fellows at $10.

Mr. President, I move the adoption of this recommendation.

The motion was seconded by Dr. Henry L. Williams and carried.

The Council recommends the following appropriations for the year 1957:

To the Committee on Conservation of

Hearing a sum not to exceed $14,500; $7,500 to be earmarked for the Subcommittee on Noise in Industry to be used for educational purposes and the balance of $7,000 to be used by the General Committee and the other subcommittees.

To the Committee on Standardization of Tonometers, $1,000.

To the American Committee on Optics and Visual Physiology, $200.

To the American Orthoptic Council, $100.

To the International Federation of Ophthalmological Societies, $300.

To the National Society for Medical Research, $1,000.

To the National Committee on Research in Ophthalmology and Blindness, $500.

To the VI International Congress of Otolaryngology, $500.

Mr. President, I move the adoption of these recommendations.

The motion was seconded by Dr. Walter H. Theobald and carried.

The Council recommends the following appointments to standing and joint committees for the year 1957:

To the Committee on Conservation of Hearing, Dr. Dean M. Lierle, Chairman.

To the Committee on Ophthalmic Pathology, Dr. Michael J. Hogan, Chairman.

To the Committee on Otolaryngic Pathology, Dr. Paul H. Holinger, Chairman.

To the Committee on Pan-American Relations in Ophthalmology, Dr. Conrad Berens, Chairman.

To the Committee on Pan-American Relations in Otolaryngology, Dr. C. L. Jackson, Chairman; Dr. Victor R. Alfaro, Dr. Norton Canfield, Dr. John Marquis Converse, Dr. José Conrad Gros, Dr. Paul H. Holinger, Dr. Howard P. House, Dr. Carlos Munos-MacCormick, Dr. William J. McNally, Dr. LeRoy A. Schall, Dr. Theodore E. Walsh.

To the Committee on Scientific Exhibit, Dr. Kenneth L. Roper and Dr. Eugene L. Derlacki, Co-Chairmen.

To the Committee on Standardization of Tonometers, Dr. Peter C. Kronfeld, Chairman.

To the Committee on Audio-Visual Education, Dr. Dean M. Lierle, Chairman.

To the Teachers' Section: Otolaryngology, Dr. Gordon D. Hoople, Chairman.

To the Teachers' Section: Ophthalmology, Dr. A. D. Ruedemann, Chairman.

Representatives to:

American Association for the Advancement of Science, Dr. M. Elliott Randolph.

American Board of Ophthalmology, Dr. Alson E. Braley, reappointed for a four-year term beginning January 1, 1957.

American Board of Otolaryngology, Dr. Francis E. LeJeune and Dr. George Reed.

American College of Surgeons, Board of Governors, Dr. Ralph O. Rychener, Dr. John G. Beall, and Dr. James V. Bolger, nominees. These three names will be presented to the College, which will appoint one for a three-year term ending in 1960.

American Committee on Optics and Visual Physiology, Dr. James E. Lebensohn reappointed for a three-year term beginning January 1, 1957.

American Orthoptic Council, Dr. Philip Knapp reappointed for a three-year term beginning January 1, 1957.

American Standards Association, Acoustical Standards Board, Dr. Gordon D. Hoople.

American Standards Association, Z80 Project (Standardization of Ophthalmic Lenses), Dr. Carl J. Rudolph and Dr. Arthur C. Linksz. Alternates, Dr. Conrad Berens and Dr. Frank Newell.

National Society for Crippled Children and Adults, Inc., Dr. Dean M. Lierle.

National Committee on Eye Banks, Dr. Alson Braley and Dr. J. Harry King.

The Council recommends the establishment of a Committee on Implants and Implant Techniques, Dr. A. D. Ruedemann, Chairman.

The Council further recommends that the Academy participate in the formation of the National Committee on Research in Ophthalmology and Blindness, with Dr. A. E. Maumenee and Dr. Bernard Becker to be appointed as Academy representatives.

Mr. President, I move the adoption of these recommendations.

The motion was seconded by Dr. Carroll R. Mullen and carried.

The Council recommends the appointment of Dr. William L. Benedict as Editor-in-Chief of the TRANSACTIONS.

Mr. President, I move the adoption of this recommendation.

The motion was seconded by Dr. M. Hayward Post and carried.

The Council nominates for Active Fellowship the 235 candidates whose names appear on the sheet that has been handed to you since you have been in the room.

Mr. President, I move that we accept the nominations of the Council.

The motion was seconded by Dr. Henry L. Williams and carried.

Newly Elected Fellows of the Academy:

Abrahamson, Ira A., Jr., 925 Fifth-Third Bank Bldg., Cincinnati 2, Ohio, OP

Albert, Dan George, 1605 22nd St. N.W., Washington 8, D. C., OP

Allen, Robert L., 122 S. Michigan Ave., Chicago 3, Ill., OP

Andrew, William Frederick, 205 W. Second St., Duluth 2, Minn., ALR

Andrews, Cyprian Herbert, 302 Medical Bldg., Prince Albert, Sask., Canada, OALR

Annesley, William Honeyford, Jr., 6910 Market St., Upper Darby, Pa., OP

Armstrong, William Riddick, 6407th USAF Hospital, APO 323, San Francisco, Calif., OP

Arsuaga, Lorenzo, Ponce de Leon 1058, Santurce, Puerto Rico, ALR

Ashodian, Mila J., Lankenau Medical Bldg., Philadelphia 31, Pa., OP

Audet, Jacques, 123 Grande-Allee, Quebec 4, Que., Canada, OP

Ballou, Robert A., 306 Western Branch Blvd., Portsmouth, Va., OP

Barnes, Leroy John, 359 E. Manchester Blvd., Inglewood 1, Calif., ALR

Bautista, Ariston G., 450 Clarkson Ave., Brooklyn 3, N. Y., ALR

Beale, John Paul, Jr., 450 Sutter St., San Francisco 8, Calif., OP

Beatrous, Frank Theo., 1218 Richards Bldg., New Orleans 12, La., ALR

Beck, Wilford William, Jr., 60 S. Fourth East St., Salt Lake City 2, Utah, ALR

Bendor-Samuel, John Edward L., Winnipeg Clinic, Winnipeg 1, Man., Canada, OP

Beuerman, Virgil Adolph, U. S. Naval Hospital, San Diego, Calif., OP

Biegel, Albert Cisler, 4085 Brockton, Riverside, Calif., OP

Biondo, Thomas, Veterans Administration Center, Dayton 7, Ohio, ALR

Blanchard, Cyrus Lloyd, 1136 W. Sixth St., Los Angeles 17, Calif., ALR

Bontley, Jack Robert, 21 E. State St., Columbus 15, Ohio, OP

Bowen, Jesse William, Jr., 907 Medical Arts Bldg., Tacoma 2, Wash., OP

Boyd, Benjamin F., Box 1189, Panama, R. P., OP

Brown, Aubrey Kenna, Walter Reed Army Hospital, Washington 12, D. C., ALR

Brown, Harry F., 1060 E. Green St., Pasadena 1, Calif., OP

Brunelle, Paul, 1260 E. St. Joseph Blvd., Montreal 14, Que., Canada, ALR

Bryant, Frederick William, Great Falls Clinic, Great Falls, Mont., OP

Buka, Theodore Edward, 199 Wm. Howard Taft Rd., Cincinnati 19, Ohio, OP

Bullen, Halsey Graves, 21 Broad St., Stamford, Conn., ALR

Burkey, Jordan Warren, 609 Cherry St., Springfield, Mo., ALR

Burns, Stanley Sherman, Jr., 106 W. Seventh St., Charlotte 2, N. C., ALR

Calkins, James Phillip, 45 N. Tucson Blvd., Tucson, Ariz., OP

Campana, Joseph Francis, 3 W. Third St., Williamsport, Pa., ALR

Chamberlain, Calvin Bernard, 174 Nemaha, Pomona, Calif., OP

Chandler, James Ryan, Jr., Ear, Nose & Throat Clinic, Station Hospital, Fort Bragg, N. C., ALR

Charbonneau, Rene, 1260 E. St. Joseph Blvd., Montreal, Que., Canada, OP

Combs, Cooley L., P. O. Box 270, Hazard, Ky., ALR

Cope, Beverly Alden, 295 E. Main St., Ashland, Ore., ALR

Culver, Warren T., School of Aviation Medicine, USAF, Randolph Air Force Base, Texas, OP

Curtis, James LeRoy, 3810th USAF Hospital, Maxwell Air Force Base, Montgomery, Ala., OP

Davis, Charles Truman, Scott and White Clinic, Temple, Texas, OP

Davis, Merle Jasper, 221 S. Sixth St., Terre Haute, Ind., OP

Dean, John Lake, 407 E. Lamar, Crockett, Texas, ALR

Deutsch, Frederic H., 927 Park Ave., New York 28, N. Y., OP

Deutsch, William E., 30 N. Michigan Ave., Chicago 2, Ill., OP

Devine, Kenneth Daniel, Mayo Clinic, Rochester, Minn., ALR

De Vol, Russell A., 300 S. Dewey, North Platte, Neb., OP

Dixon, John B., 3244 E. Douglas, Wichita, Kan., OP

Douglas, John Evans, 1403 San Antonio St., Austin 1, Texas, ALR

Draper, William Leonard, 509 Hermann Professional Bldg., Houston 25, Texas, ALR

Drucker, Arnold P., 406 N. San Mateo Dr., San Mateo, Calif., OP

Eberly, Byron Thomas, 405 Professional Bldg., Portsmouth, Va., ALR

Ellis, George Saba, 812 Maison Blanche Bldg., New Orleans 16, La., OP
England, Myron C., 1011 Main, Woodward, Okla., ALR
Everett, William Geary, 401 Jenkins Bldg., Pittsburgh 22, Pa., OP

Fisher, Albert, Bank Street Clinic, Decatur, Ala., OP
Fleming, Robert James, 114 N. Main St., St. Charles, Mo., OP
Fletcher, Russell, 1010 B St., San Rafael, Calif., ALR
Flocks, Milton, 850 Middlefield Rd., Palo Alto, Calif., OP
Folk, Eugene Roy, 4500 W. Oakton St., Skokie, Ill., OP
Fraser, Wilmur Faulkner, 183 Metcalfe St., Ottawa 4, Ont., Canada, OP
Frey, Harry Bradford, 4298 Orange St., Riverside, Calif., ALR

Gafford, August Vincent, 104 E. Third Ave., Rome, Ga., ALR
Gallaher, John Albert, 1806 Bonanza St., Walnut Creek, Calif., OP
Gann, Eldred LaMonte, Gazette Bldg., Emporia, Kan., ALR
Gardner, Carl Arthur, 1410 American Nat'l Bank Bldg., Kalamazoo, Mich., ALR
Giotta, Peter John, U. S. Naval Hospital 926, FPO, San Francisco, Calif., OALR
Glaeser, John H., 304 Doctor's Bldg., Minneapolis 2, Minn., ALR
Goldcamp, Richard Renner, 810 Dollar Bank Bldg., Youngstown, Ohio, ALR
Goldman, Irving S., 5913 Callowhill St., Pittsburgh 6, Pa., OP
Goldsmith, Maximilian O., 1320 Cornaga Ave., Far Rockaway 91, N. Y., OP
Goodman, Merrill, 2035 Lakeview Rd., New Hyde Park, L. I., N. Y., ALR
Goodwin, Rufus C., 2000 Van Ness Ave., San Francisco 9, Calif., OP
Goorchenko, Victor A., 1848 S. Elena Ave., Redondo Beach, Calif., OP
Grassi, Anthony John, 1769 W. Seventh St., Brooklyn 23, N. Y., OP
Green, Earl Webster, Green Clinic, Hall Ave., Hattiesburg, Miss., OP
Green, Oscar, 3120 N. Meridian St., Indianapolis 8, Ind., ALR
Greenway, Robert Edward, 360 Queens Ave., London, Ont., Canada, ALR
Grove, Raymond F., 905 Murchison Bldg., Wilmington, N. C., OP
Guckien, Joseph L., 609 Hulman Bldg., Evansville, Ind., ALR
Gwathmey, George Tayloe, 417 E. Robinson Ave., Orlando, Fla., OP

Harrison, Wiley Haxton, 55 E. Washington St., Chicago 2, Ill., ALR
Hartridge, Theodore Livingston, Brooke Army Hospital, Fort Sam Houston, Texas, ALR
Hayter, Dale W., 234 W. Beauregard, San Angelo, Texas, OP
Helfrich, Mart L., Jr., Second Nat'l Bank Bldg., Bucyrus, Ohio, OP
Hendrix, William C., Jr., 1216 Pennsylvania Ave., Fort Worth 4, Texas, ALR
Henry, Lewis Murphey, 602 Garrison Ave., Fort Smith, Ark., OP
Hicks, James Johnston, 605 Medical Arts Bldg., Birmingham 5, Ala., ALR
Hodgson, Thomas Harold, 174 St. George St., Toronto, Ont., Canada, OP
Hogan, Thomas F., Jr., 414 Navarro St., San Antonio 5, Texas
Horsley, George Ernest, Madison Sanitarium & Hospital, Madison College, Tenn., ALR
Horwitz, Irving David, 628 S. San Vicente Blvd., Los Angeles 48, Calif., OP
Hough, Mac Johnson, 821 Doctors Bldg., Charlotte, N. C., OP

Jeans, Park C., Jr., Box 963, Greenwood, S. C., OP
Johnson, David Stanton, 208 David Whitney Bldg., Detroit 26, Mich., OP
Johnson, Edgar Norman, Professional Bldg., Augustine Cut-off, Wilmington 3, Del., ALR
Jordan, Joseph Mitchell, U. S. Naval Hospital, Corona, Calif., OP

Katz, Arnold Hirsch, 4571 Sherbrooke St. West, Montreal, Que., Canada, OP
Kelly, Stephen John, 1025 S. 17th St., Birmingham 5, Ala., OP
Kimball, Paul, 2465 S. Downing St., Denver 10, Colo., OP
Kirkeeng, Melvin Johnson, 1700 E. Charleston, Las Vegas, Nev., OP
Knight, Frederick Edward, 2730 Fresno St., Fresno, Calif., ALR
Krohn, David L., 30 E. 40th St., New York 16, N. Y., OP
Kusske, Bradley W., 444 Lowrey Medical Arts Bldg., St. Paul 2, Minn., ALR
Kusske, Douglas R., 350 St. Peter St., St. Paul 2, Minn., ALR
Kyler, Stephen L., Veterans Administration Hospital, Pittsburgh 40, Pa., ALR

Lachman, Bernard E., 1117 Hamilton St., Allentown, Pa., OP
Lake, J. Douglas, 66 E. 79th St., New York 21, N. Y., ALR

Langgaard, Charles Erich, 129 Summit Ave., Summit, N. J., ALR
Lawwill, Stewart, Jr., 1008 Medical Arts Bldg., Chattanooga, Tenn., OP
Leavenworth, Richard Ormond, Jr., 4959 Excelsior Blvd., St. Louis Park, Minn., OP
Lee, Henry Yen, 1401 S. Hope St., Los Angeles 15, Calif., OP
Lee, Samuel, 1431 S. Broadway, Santa Ana, Calif., ALR
Lerner, George G., 717 E. Genesee St., Syracuse 2, N. Y., ALR
Lewis, Robert C., 2901 Capitol Ave., Sacramento, Calif., ALR
Little, Henry Owen, 455 Warren St., Hudson, N. Y., OP
Lorenzen, Robert F., 550 W. Thomas Rd., Phoenix, Ariz., OP
Luce, Cyril Martin, 255 S. 17th St., Philadelphia 3, Pa., OP
Ludmerer, Sol, 3736 Atlantic Ave., Long Beach 7, Calif., OP

Macmillan, Bruce B., 3700 Fifth Ave., Pittsburgh 13, Pa., ALR
Macpherson, Gordon Barwick, 221 King St. East, Kingston, Ont., Canada, OALR
Maher, Robert Campbell, S. 427 Bernard St., Spokane 4, Wash., OP
Mahood, Alan Winston, 176 St. George St., Toronto 5, Ont., Canada, OP
Malis, Sol, 335 S. Kalmia St., Escondido, Calif., ALR
Mailloux, Luc, 525 Cherrier St., Montreal, Que., Canada, OP
Mangubat, Liborio L., 25 Kitanlad St., Quezon City, Philippines, OP
Mansheim, Bernard Joseph, 212 S. 11th St., LaCrosse, Wis., OP
Mansur, Harl D., Jr., 1400 Eighth St., Wichita Falls, Texas, OP
Maylath, Florian R., 221 W. Broad St., Bethlehem, Pa., OP
McCann, Thomas P., Jr., 2146 Jackson Ave., Seaford, L. I., N. Y., OP
McCoy, Charles Thomas, 312 Wolcott Bldg., Hutchison, Kan., OP
McIntire, Frederic Joseph, Jr., 63 N. Common St., Lynn, Mass., ALR
McKendall, H. Raymond, 454 Angell St., Providence 6, R. I., OP
McLaughlin, Brian Charles, 324 E. Wisconsin Ave., Milwaukee 2, Wis., OP
McNair, Joel N., Madigan Army Hospital, Tacoma, Wash., OP
McNeill, John Alexander, 1052 Lowry Medical Arts Bldg., St. Paul 2, Minn., OP
Meacham, Charles Thomas, 65 South St., Stamford, Conn., OP
Mettler, Donald Charles, 1216 S.W. Yamhill St., Portland 5, Ore., ALR
Meyer, Richard Elmer, 1416 Main St., Quincy, Ill., OP
Milburn, Graham Burton, 1104 Nix Professional Bldg., San Antonio 5, Texas, OP
Miller, Lowell Cornelius, 117 N. Claudina, Anaheim, Calif., OP
Minasian, Edmond V., 11th & L. Bldg., Sacramento, Calif., OP
Molony, Terence James, Suite 434, Medical Arts Bldg., Toronto, Ont., Canada, ALR
Montgomery, William Wayne, 243 Charles St., Boston 14, Mass., ALR
Montross, Henry Evan, 2814 N. Eastern Ave., Los Angeles 32, Calif., OP
Moran, John Patrick, 209 Medical Dental Bldg., Corpus Christi, Texas, ALR
Morgan, William C., Jr., 1106 Virginia St. East, Charleston 1, W. Va., ALR
Mulcahy, Neil Donald, 2411 Ocean Ave., San Francisco 27, Calif., ALR
Mullen, Raymond Stephen, 3780 12th St., Riverside, Calif., OP
Murto, Robert E., 28 W. State St., Trenton 8, N. J., OP
Myers, Paul B., 223 Medical Dental Bldg., Portland 5, Ore., ALR

Obregon, Gonzalo Gomez, University Hospitals, Iowa City, Iowa, ALR
O'Brian, Dennis Martin, 154 Lexington Ave., Passaic, N. J., ALR
O'Rourke, James Francis, Ophthalmology Branch, NINDB, Nat'l Institutes of Health, Bethesda 14, Md., OP
Owensby, Lindell C., 222½ W. Sixth St., Concordia, Kan., OP

Passmore, Jack Webster, Box 156, Fitzsimons Army Hospital, Denver 8, Colo., OP
Perlman, Arnold R., 1387 Main St., Springfield 3, Mass., OP
Perri, Frank Adrian, Lt. Col., 3345 U.S.A.F. Hospital, Box 12, Chanute Air Force Base, Rantoul, Ill., ALR
Phillips, Burton Errington, 7600 John R St., Detroit 3, Mich., ALR
Pinschmidt, Norman William, 52 State St., Gallipolis, Ohio, OP
Post, Edmund A., 350 St. Peter St., St. Paul 2, Minn., ALR
Presto, Ernest Carl, 37-55 76th St., Jackson Heights, L. I., N. Y., OP
Purcell, Edward F., 110 E. Main St., Madison 3, Wis., OP

Quint, J. Harley, Jr., 1700 Waterman Ave., San Bernardino, Calif., OP

Ralston, Robert Linton, 753 N. Church St., Spartanburg, S. C., ALR

Raynor, Everett Freeman, 925 W. Georgia St., Vancouver 1. B. C., Canada, OP

Reaves, Robert Grisham, Jr., 1308 N. Broadway, Santa Ana, Calif., ALR

Reese, Stanley Elwyn, 8939 La Mesa Blvd., La Mesa, Calif., ALR

Rhoades, Albert Leonard, Geisinger Memorial Hospital, Danville, Pa., OP

Roberts, Nat Craig, 180 W. First St., Reno, Nev., OP

Rongetti, Joseph Richard, 42 Fifth Ave., New York 11, N. Y., ALR

Rothen, Robert Madison, 502 W. 13th St., Austin, Texas, OP

Rounthwaite, Francis John, 386 Queens Ave., London, Ont., Canada, ALR

Rouse, David Mattingly, 117 E. Monroe, Mexico, Mo., OP

Russell, Daniel Abell, Jr., 429 Medical Arts Bldg., San Antonio 5, Texas, OP

Sampson, John Joseph, 213 Burns Bldg., Colorado Springs, Colo., OP

Schlegel, Henry Edward, Jr., 621 High St., Oregon City, Ore., OP

Schwartz, Ariah, 1500 Fifth Ave., San Francisco 22, Calif., OP

Seligson, Alvin, 3345th USAF Hospital, Chanute AFB, Rantoul, Ill., OP

Shapley, Albert, 35-29 86th St., Jackson Heights, L. I., N. Y., OP

Shuster, Allan R., Memorial Medical Center, Dept. of Otolaryngology, Williamson, W. Va., ALR

Sinclair, Stephen G., 7002 Jenkins Arcade Bldg., Pittsburgh 16, Pa., OP

Sinha, Sharda Prasad, Royal Victoria Hospital, Montreal, Que., Canada, ALR

Sinskey, Robert Marshall, 2210 Santa Monica Blvd., Santa Monica, Calif., OP

Slater, Jules, 1 Duke St., Hamilton, Ont., Canada, OP

Smith, Denton Weymouth, 390 Tenth St., Beaumont, Texas, ALR

Smith, Edward John, 1538 Sherbrooke St. West, Montreal, Que., Canada, ALR

Soss, Thomas Leonard, 406 N. San Mateo Dr., San Mateo, Calif., ALR

Speaker, Other Franklin, 586 N. Main St., Pomona, Calif., OP

Stambaugh, Norman Fletcher, 60 Wyoming St., Dayton 9, Ohio, OP

Stearns, Melvin Joseph, 405 Caroline St., Ogdensburg, N. Y., ALR

Stephens, William Carey, 818 Clinic Dr., Tyler, Texas, ALR

Sternes, Frank Charles, 6050 Cermak Rd., Cicero 50, Ill., OP

Stichel, Frederick Louis, Jr., 4580 Edmondson Ave., Baltimore 29, Md., ALR

Sullivan, John Vincent, Fifth and Court St., Carroll, Iowa, OP

Swords, Collins Ward, Jr., 406 Huntington Medical Bldg., Miami 32, Fla., OP

Tamler, Edward, Stanford University Hospital, San Francisco 15, Calif., OP

Tandy, William, 307 N. Locust St., Inglewood, Calif., OP

Tchao, Jou S., 82 Pine St., Lewiston, Maine, OP

Thompson, John Reginald, 327 E. State St., Columbus 15, Ohio, OP

Tour, Robert Louis, 384 Post St., San Francisco 8, Calif., OP

Trapp, Francis William, 55 W. Main St., New Britain, Conn., ALR

Trible, William M., 1150 Connecticut Ave. N.W., Washington 6, D. C., ALR

Troyer, Dana Orion, 1008 N. Main St., Bloomington, Ill., OP

Tyler, John Wayne, 518 Eastman Bldg., Boise, Idaho, OP

Tyner, Harlan H., 3202 N. Meridian St., Indianapolis 8, Ind., OP

Valone, Richard James, 264 Genesee St., Utica 2, N. Y., OP

van Herick, William, 595 Buckingham Way, San Francisco 27, Calif., OP

Walker, Ethan Allen, Jr., 301 N.W. 12th St., Oklahoma City 3, Okla., ALR

Walsh, John Joseph, 2404 W. 63rd St., Chicago 29, Ill., ALR

Walsh, Rita, 1008 N. Main St., Bloomington, Ill., OP

Walter, Claus D., Stadt Krankenanstalten, Krefeld, Germany, ALR

Weaver, Rex Winfield, 122 E. Main St., Mesa, Ariz., OP

Wehr, Maurice Burton, 1712 Rhode Island Ave. N.W., Washington 6, D. C., OP

Weintraub, Alfred, 115 E. 82nd St., New York 28, N. Y., OP

Weiser, Albert, 390 Pine St., Fall River, Mass., ALR

Weiss, Herman, 6360 Wilshire Blvd., Los Angeles 48, Calif., OP

Weisskopf, Alex, 40 San Mateo Dr., San Mateo, Calif., ALR

Wendell, Franklyn R., 212 W. Lodi Ave., Lodi, Calif., OP

Wenzel, Paul Albert, 3191 S. Broadway, Englewood, Colo., OP

White, Donald Edward, Maj. USAF (MC) 7100 USAF Hospital, APO 633, New York, N. Y., OP
Wick, H. Ward, 858 Fourth St., Santa Rosa, Calif., OP
Wiggins, Robert Lawrence, Campbell Bldg., Victoria, B. C., Canada, OP
Williams, John Richard, 140 Lockwood Ave., New Rochelle, N. Y., ALR
Williams, Richard Kennon, 2015 Monument Ave., Richmond, Va., OP
Wilson, Frederick Albert, 131 Fulton Ave., Hempstead, L. I., N. Y., ALR
Wilson, Heston Lawshe, 1118 Ninth Ave., Seattle 4, Wash., ALR
Wong, Andrew Shansik, 236 W. Main St., Meriden, Conn., OP
Wong, George L., 241 Queens Ave., London, Ont., Canada, ALR

Yast, Charles Joseph, 504 Broadway, Gary, Ind., ALR
Yockey, Robert Harold, 150 N. Jefferson St., Kittanning, Pa., OP
Younger, Lewis Ian, 214 Sixth Ave. West, Calgary, Alta., Canada, ALR

Zanka, Jaroslav A., Veterans Administration Hospital, Butler, Pa., ALR
Zeavin, Bernard Harold, 1262 D. S.U. Army Hospital, Fort Dix, N. J., OP

For officers of the Academy the Council nominates the following for the year 1957:

President: Dr. Erling W. Hansen, Minneapolis.

President-Elect: Dr. LeRoy A. Schall, Boston.

First Vice-President: Dr. Louis H. Clerf, St. Petersburg, Florida.

Second Vice-President: Dr. David O. Harrington, San Francisco.

Third Vice-President: Dr. O. E. Van Alyea, Chicago.

Councillor: Dr. Victor A. Byrnes, Washington, D. C.

Executive Secretary-Treasurer: Dr. William L. Benedict, Rochester, Minnesota.

Secretary for Ophthalmology: Dr. Kenneth L. Roper, Chicago.

Secretary for Otolaryngology: Dr. Eugene L. Derlacki, Chicago.

Secretary for Instruction in Ophthalmology: Dr. A. D. Ruedemann, Detroit.

Secretary for Instruction in Otolaryngology and Maxillofacial Surgery: Dr. Dean M. Lierle, Iowa City.

Secretary for Home Study Courses: Dr. Daniel Snydacker, Chicago.

Secretary for Public Relations: Dr. Glen Gibson, Philadelphia.

Mr. President, I move the adoption of these nominations.

The motion was seconded by Dr. Carroll Mullen and carried.

The Council recommends that the next scientific session of the Academy be held at the Palmer House, in Chicago, October 13-18, 1957.

Mr. President, I move the adoption of this recommendation.

The motion was seconded by Dr. Kenneth L. Roper and carried.

DR. CORDES: The Council has approved the following resolution concerning a proposed amendment to the Constitution and By-Laws:

"RESOLVED: To revise Article III, Members and Fellows, of the Constitution, inserting after the words 'Active Fellows' and before the words 'and Honorary Fellows,' the words 'Associate Fellows.'

"After Section (b) of Article III inserting a new Section (c) to cover Associate Fellows, as follows:

"'(c) Associate Fellows:

"'Associate Fellows may be elected from those in fields allied to Ophthalmology and Otolaryngology who are not eligible to other fellowship classifications and who are proposed by two Active Fellows, approved by the Council, and have a three-fourths affirmative vote of all Fellows present at the Annual Meeting.'

"This revision necessitates changing the present Section (c) to Section (d), and the present Section (d) to Section (e).

"To revise Article V, Section 6, of the By-Laws, inserting after the first paragraph regarding Honorary Fellows, a paragraph to read:

"'Associate Fellows shall pay dues equal to one-half the regular dues for Junior Fellows. They shall not be eligible to vote or to hold office, but they shall receive the TRANSACTIONS.'"

According to the Constitution, this resolution cannot come up for action until next year.

Mr. President, that concludes the report of the Council.

PRESIDENT FURSTENBERG: You have heard the report of the Secretary and also the report of the Senior Member of the Council. May I ask now for acceptance of the report as a whole?

A motion was made by Dr. Carroll Mullen to accept the report of the Senior Member of the Council in its entirety. The motion was seconded by Dr. Daniel Snydacker and carried.

PRESIDENT FURSTENBERG: Is there any new business to come before this meeting? Any on the table?

EXECUTIVE SECRETARY-TREASURER BENEDICT: None on the table.

PRESIDENT FURSTENBERG: Any new business from the membership? If not, we will go on to the next item on the agenda, and I shall ask Dr. Boies and Dr. Williams to escort the President for 1957, Dr. Erling Hansen, to the rostrum, please.

(Dr. Erling Hansen was escorted to the rostrum by Drs. Boies and Williams and the members arose and applauded.)

DR. ERLING HANSEN: I just want to say that for the past year, since I was made President-Elect, I have wondered how it happened that this was coming to me, and I haven't been able really to rationalize it. I can only trace a series of accidental circumstances along the way that pushed me along and that finally have brought me here, certainly a thing that I had never expected.

I have watched a procession of presidents come and go in this Academy for nearly forty years, men of renown. All had our great respect and admiration. And here I am in the position that I think is the greatest in the combined fields of ophthalmology and otolaryngology. Thinking of these men who have held this Chair in the past, I can certainly only say that I thank you from the bottom of my heart with real sincerity and humility.

Thank you very much. (Applause)

PRESIDENT FURSTENBERG: I am sorry that Dr. LeRoy Schall is not here because he is President-Elect for 1957. I had intended to ask Dr. Theobald and Dr. Reese to bring him forward, but I think we will have to recognize him in absentia at this time.

In closing this meeting, if there is no further business, I want to express my very sincere gratitude and appreciation to all of you for the many kindnesses you have extended to me and for the great interest that you have taken in the scientific sessions and in the instruction courses. You have been most receptive in listening to the speakers who have been on the platform during the past five days, and I am sure that your presence has inspired all of them to carry on sucessfully with their work.

I feel too, that every member of the audience was a participant in this meeting because he can go back home to his community and disseminate the knowledge which he has acquired here and put it to good practical usage for the better care of patients.

With these few remarks I want to express my gratitude again to all of you and to wish you good health and continued success.

Thank you. (Applause)

The meeting is adjourned.

(The meeting adjourned at 6:00 o'clock.)

In Memoriam

James Alexander Henderson.....Quincy, Illinois
September 2, 1956

Harvey James Howard.....Clearwater, Florida
November 6, 1956

Harry James Inglis.....Boston, Massachusetts
August 23, 1956

Lewis Francis Morrison.....San Francisco, California
November 10, 1956

Richard Johnson Payne.....St. Louis, Missouri
August 28, 1956

Morris B. Simpson.....Kansas City, Missouri
November 10, 1956

COMMITTEE REPORTS

Upon recommendation by the Activities Committee, the Council voted acceptance of the following reports of standing and joint committees:

REPORT OF THE ARMED FORCES COMMITTEE

M. ELLIOTT RANDOLPH, M.D., Chairman

The Armed Forces Committee of the Academy has been inactive for several years and the chairman, Dr. M. Elliott Randolph, has recommended that it be discontinued.

REPORT OF THE COMMITTEE ON CONSERVATION OF HEARING

DEAN M. LIERLE, M.D., Chairman

The Committee on the Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology held a meeting at the Palmer House in Chicago, Illinois, on Saturday, November 12, 1955. The entire committee was present, as well as Dr. W. L. Benedict, Secretary-Treasurer of the American Academy of Ophthalmology and Otolaryngology, and Mr. Floyd Frazier, representative of the Council of Industrial Hygiene of the American Association of Mutual Casualty Companies. At this meeting Dr. Hoople was appointed vice-chairman, and an advisory group was organized which consists of the following members: the chairman, Dr. Lierle; vice-chairman, Dr. Hoople; and the chairmen of the various subcommittees, Dr. House, Dr. Kinney, Dr. Williams, Dr. McNally, Dr. Boies and Dr. Canfield.

The Council of the American Academy of Ophthalmology and Otolaryngology in 1955 appropriated the sum of $14,500 for 1956, of which $7,500 was earmarked for the Subcommittee on Noise and the remainder for the support of the Committee on the Conservation of Hearing and the various subcommittees.

The Academy has given the Committee the privilege of obtaining money for research in its name and will also give $1,000 for completed research to any individual upon the recommendation of the Editorial Committee and the approval of the Council.

For the Academy meeting in 1955, an excellent exhibit was prepared under the supervision of Dr. Williams and Dr. Simonton. The function of the exhibit was to give information regarding the activities of the Committee on Conservation of Hearing and to interest every otolaryngologist in doing more work in hearing by demonstrating the methods which are commonly used in examination of hearing loss. A portable soundproof room was displayed, which was of considerable interest.

The question of whether the Committee should take over standardization of audiometers as one of its functions was referred to the Noise Committee.

Dr. David was appointed to secure cooperation with the British on the definition of zero hearing loss or what is considered normal hearing.

Dr. Glorig, in cooperation with Drs. Carhart, Davis, Hardy, Hirsh, Hoople, Reger, Rudmose, and Wheeler, is compiling material for a Handbook on Audiometry. It is expected that the Handbook will be completed by the next meeting.

During the last year Drs. Carhart and Hoople were appointed as a special committee on liaison between otology and audiology. The special committee was authorized to invite the American Speech and Hearing Association to establish a companion committee. The invitation was accepted. The two special committees met in Chicago on April 16, 1955. The goal was to clarify the relationship between the practicing otolaryngologist and the lay specialist in hearing problems (often called a "clinical audiologist"). The Committees decided to release a joint report. The report consisted of three parts: (1) a statement of a mutually acceptable orientation to the problems under consideration, (2) special recommendations for encouraging interprofessional cooperation, and (3) a review of topics warranting further attention. The committee in general recommended a number of revisions in the report and suggested that it be given at the next meeting with comments from the American Speech and Hearing Association.

The Committee of Eight, whose function was to report on the evaluation of percentage of hearing loss with the American Medical Association, was continued.

A manual entitled "Introduction to Acoustics for Otolaryngologists," written by Dr. Tonndorf, was sent to the various members of the Committee for review.

The name of the Subcommittee on Publica-

tion, of which Dr. Williams was chairman, was changed to Editorial and Exhibit Committee.

Dr. Glorig reported that the following data had been obtained by the Research Committee of the Subcommittee on Noise in Industry:

1. Approximately 35,000 punched and verified IBM cards ranging from jet mechanics to light construction workers

2. 1,000 key sort cards on specific experiments

3. Noise measurements and analysis on nearly all significant industries in the Los Angeles area and many of the larger plants about the country

4. Over-all noise levels and analysis on about 75 to 80 diversified locations used for audiometry

The following general conclusions had been obtained regarding the threshold-shift studies on over 500 men:

1. The amount and location of shift is related to level and spectrum of noise

2. The amount of shift decreases as hearing loss increases

3. The amount of shift is greater in inexperienced ears than in experienced ears (green-ripe-taut adaptation or what)

4. Most of shift occurs in the first part of the day; slight increase in total shift during the last half of day

5. Total shift in groups was between 5 and 10 db, with a great deal of individual variation

6. Temporary threshold shift was eliminated when ear plugs were worn

At the 1954 Wisconsin Fair, 135 pages of graphs and tables had been made. The amassed data have been treated statistically for validity and significance. This compilation has been compared to census reports on the State of Wisconsin and Milwaukee County to test its value. Three thousand five hundred individuals were tested with pure-tone and spondees, and data were collected under the following headings:

1. Presbycusis
2. Normal hearing for pure tones and speech reception
3. Office worker vs. factory worker
4. City dweller vs. farmer
5. Military service vs. no military service
6. Noise exposure on basis of indicated levels according to history
7. Effect of language background on speech reception threshold
8. Prediction of speech reception on basis of pure-tone threshold

At the Wisconsin State Fair, three specific projects were undertaken:

1. Automatic audiometry—800 tested
2. Evaluation of new speech-testing material for use in establishing disability—900 tested
3. Best hearing threshold—122 tested

The Research Committee, under the direction of Dr. McNally, reported that the committee was concerned with ways and means of further research and was considering the following methods:

1. Advocate research as an important part of the resident-training program
2. Publicize the Academy honoraria
3. Encourage residents to qualify for Academy prizes for finished research
4. Compile a list of available funds for research in otolaryngology
5. Promote nationwide temporal bone collection in cooperation with the Subcommittee on Hearing in Children

A questionnaire had been sent to the chiefs of all institutions having full three-year otolaryngology residencies as to the facilities available for research and also as to their opinion regarding the role of research in residency training in otolaryngology. The response to the questionnaire was encouraging, and it was believed that the research award for residents might accomplish the purpose of stimulating residents to utilize fully the clinical research facilities now available to them and should aid in stimulating in them a sense of inquiry into the voids and problems existing in the science of otolaryngology. The committee felt that not only the Academy members in general but the teachers in particular need to be convinced of the value of research in the resident-training program. It recommended that (a) a member of the committee present a paper at the Teachers' Section on the value of research in the resident-training program, (b) the results of the survey of the otolaryngology clinics and the plan to encourage residents to qualify for the Academy honoraria for completed research be presented before the Teachers' Section or even before the general meeting.

Dr. Kinney, chairman of the Committee on Hearing in Children reported that his committee was working on the following projects:

1. Pathology of deafness in children

Advised that a program be formulated for the collection and study of temporal bones and brains of children who had had a known deafness and who had had adequate premortem hearing studies. This program would also in-

clude the study of the same type of material from adults who would have qualified as described above.

2. National Foundation for the Collection and Distribution of Funds for Research on Hearing Problems

The objectives of such a Foundation would be

a. To create a nationwide interest in the problems of hearing.
b. To finance basic research
c. To support educational programs
d. To support rehabilitation programs

3. Recommended that the Academy purchase six copies of the motion picture "Susan's Wonderful Adventure" from the Audio-Visual Center of Syracuse University
4. Proposed making motion picture for pediatricians, general practitioners, residents and interns, depicting diagnosis and treatment of some ear conditions

The Committee recommended that the Subcommittee carry on with the first two projects and agreed to purchase six copies of the film "Susan's Wonderful Adventure," which would be distributed through the American Medical Association. It was recommended that the motion picture for pediatricians, general practitioners, residents and interns be made by the University of Iowa. It was also suggested that the film made by Dr. McHugh be distributed through the American Medical Association.

The Subcommittee on Hearing in Adults, under the chairmanship of Dr. Boies, reported that they had reviewed the Manual for a School Hearing Conservation Program and had made a few revisions. He also stated that his committee was writing a manual, and that each member would be submitting a chapter.

The chairman of the Subcommittee on Noise in Industry, Dr. House, gave the following special report concerning the activities of the Subcommittee from October 1955 to October 1956:

The research activities of the Subcommittee on Noise in Industry are progressing very satisfactorily. A new Guide to Industry, encompassing the results of our research to date, is now in the final stages of preparation.

Several Subcommittee meetings have been held throughout the year to review our research program as well as our financial commitments. Our insurance support is continuing, with an annual grant of approximately $90,000 per year. A recent grant of approximately $20,000.00 per year for the next five years has been obtained from the National Institutes of Health. Likewise, a grant of $5,000.00 per year has been obtained from the American Petroleum Institute to begin in July 1957.

The National Institutes of Health and the American Petroleum Institute grants will lessen the burden now being carried by the insurance group.

The Subcommittee on Noise in Industry feels strongly that it is imperative for the American Academy of Ophthalmology and Otolaryngology to continue its annual grant of $7,500.00 per year, which is used exclusively for educational purposes. The money obtained from other grants is used strictly for research purposes.

Any consideration you may give to the continuance of our annual grant will indeed be greatly appreciated by the Subcommittee on Noise in Industry.

During the year the various subcommittees have held meetings and will present a report of their activities at the next general meeting.

The Committee appreciates very much the appropriation made by the Council of the American Academy of Ophthalmology and Otolaryngology in support of the work of the Committee on Conservation of Hearing, and we respectfully request for 1957 that same amount—$14,500, of which $7,500 is earmarked for the Subcommittee on Noise in Industry. All of our grants are dependent on the financial aid of the American Academy of Ophthalmology and Otolaryngology.

REPORT OF THE COMMITTEE ON OPHTHALMIC PATHOLOGY

MICHAEL J. HOGAN, M.D., Chairman

The Committee on Ophthalmic Pathology has held several informal conferences during the past year. The following matters have been considered:

1. *Ophthalmic Pathology Registry*

Captain Silliphant of the Registry reports the following with regard to the activities of the Registry: (This report covers their annual year 1955. It is felt we should continue these reports as they are received from the Registry even though they do not include information for 1956.)

One thousand six hundred and thirty-five (1635) specimens were contributed during 1955; of these 1012 were whole eyes (979 human and 33 animal). Seven hundred thirty (730) were contributed from civilian sources. The other 621 cases were previously sectioned

eyes and specimens from the conjunctiva, lids and orbit. There is now a total of 42,289 accessions in the Registry. The backlog of eyes was reduced by 240 during the year.

One hundred sixty-seven (167) individuals borrowed loan sets of slides. Of these, 32 were in the Armed Forces, 3 were in the Public Health Service, 17 were in the Veterans Administration, and 115 were civilians.

A course in Ophthalmic Pathology was given March 21-25 for 32 physicians from the Armed Forces and other governmental institutions and 12 civilians.

A course in Ophthalmic Pathology for general pathologists was given in Chicago, October 15, 1955.

Four medical officers were given on-the-job training for varying periods during the year, and six residents from the Episcopal Eye, Ear & Throat Hospital spent five months each studying ophthalmic pathology.

2. *Teaching Manual*

The teaching manual is as yet incomplete, but progress is being made on the production of this teaching aid.

3. *Ophthalmic Pathology Laboratories*

The list of ophthalmic pathology laboratories was published during the past year. Additions have been made to this list during the year, and it will be republished in all journals.

4. *Instruction Courses in Pathology*

New instruction courses have been added and several which have been present in the past are being improved. Dr. Frederick Carriker has completed the preliminary phase of a motion picture designed to teach gross ophthalmic pathology. Several new courses have been added to the basic pathology course given by Dr. Georgiana Theobald.

REPORT OF COMMITTEE ON OTOLARYNGIC PATHOLOGY

PAUL H. HOLINGER, M.D., Chairman

The Committee on Otolaryngic Pathology would like to submit the following report of activities during the past year:

1. The ATLAS OF OTOLARYNGIC PATHOLOGY, published under the joint sponsorship of the Academy, the American Registry of Pathology and the Armed Forces Institute of Pathology, has been available since December 1955. Distribution is through the Armed Forces Institute of Pathology. The sale of volumes has been small.

This Committee will continue to publicize and promote the ATLAS, which is of interest to otolaryngologists, pathologists and chest surgeons. Announcements of its availability will continue to be made at meetings where these specialists gather and additional advertisements and editorial comment will appear in appropriate journals. We suggest that advertising copy regarding the ATLAS, its cost, and where it can be procured, be carried in the TRANSACTIONS of the Academy.

2. Active work on the pathologic material in the field of otolaryngology at the American Registry had been postponed during the year previous to publication of the ATLAS in order to concentrate on its production. During the past year the Registry has again taken up this study, and your Committee is making every effort to stimulate interest in submitting material. For some years, effort has been made to develop a standard form for use in this connection, and this work continues.

3. Because there appears to be a lack of knowledge of the proper way to remove temporal bones for study, this Committee is studying ways of supplying this information. It is planned to publish in appropriate periodicals a description of this procedure, and one of the Committee members (Edmund P. Fowler, Jr.) has completed a film illustrating the method. The film will be reviewed by the Committee at the coming meeting of the Academy, and after approval will be shown at gatherings of otolaryngologists and pathologists, including the International Congress of Otolaryngology in Washington, May 5-10, 1957.

4. The Committee continues to consider methods of improving the teaching of pathology to residents in otolaryngology. It has been found that too often that part of a residency apportioned to pathology is of little value because of emphasis on general pathology rather than training in the pathology of otolaryngology. The Committee hopes soon to have definite recommendations to make. These will be submitted to the Council of the Academy and to the American Board of Otolaryngology for consideration before adoption is suggested. A residency in pathology is available at the Armed Forces Institute of Pathology to a qualified physician for the study of otolaryngic pathology. This Committee continues its search for a candidate for the residency with the understanding that the Academy stands willing to provide a stipend to cover maintenance during this period.

5. At the request of the Council, the Committee on Otolaryngic Pathology and Dr. Ben H. Senturia, Associate in charge of Otolaryngology, Home Study Courses, are undertaking a survey of slides of otolaryngic patholo-

gy available on loan from the Armed Forces Institute of Pathology. These have been used to a considerable extent in connection with preparation for Board examinations. Preliminary investigation reveals the fact that the sets of slides are both inadequate and inferior in quality. Col. Marcus R. Beck, Chief, ENT Section, Pathology Division, AFIP, will be in Chicago during the Academy meeting and will present a complete report on the subject, following which recommendations will be made. We request, therefore, that the Council allow us further time to complete this study and permit us to present a further report of progress at the midwinter meeting of the Council [Program Committee] or at such time as designated. The Committee is anxious to complete this extremely important aspect of its activities, and through the cooperation of Colonel Beck and Dr. Senturia, progress is very satisfactory.

6. The Committee on Otolaryngic Pathology wishes to increase its personnel by the appointment of Dr. Ben H. Senturia of St. Louis and Dr. George F. Reed of Boston.

Addendum (*October* 17, 1956)

At the request of the Council, the Committee on Otolaryngic Pathology has investigated the present status of the sets of otolaryngic pathology slides available on loan from the Armed Forces Institute of Pathology. Our study was not completed in time for presentation at the earlier meeting of the Council, and we would like to report the results of our survey at this time.

The slide sets were found to be both inadequate and incomplete because of the heavy usage they have received, and it was recommended that 100 new sets be assembled. This Committee will cooperate with Lt. Col. Marcus Beck, Chief, ENT Section, Pathology Division, Armed Forces Institute of Pathology, by furnishing normal tissues and examples of pathologic conditions needed to complete the sets as promptly as possible. As in the present sets, a large number of pathologic conditions in otolaryngology as well as specimens of normal tissue will be represented. The sets are being assembled with the aim of offering assistance to otolaryngologists taking the Academy Home Study Courses in otolaryngology and those preparing for the American Board examinations. A brochure is to be prepared correlating the conditions represented in the slide sets with the descriptive material in the Atlas of Otolaryngic Pathology.

A complete report of the Committee discussions will be filed at a later date.

REPORT OF THE COMMITTEE ON PAN-AMERICAN RELATIONS IN OPHTHALMOLOGY

CONRAD BERENS, M.D., Chairman

At the Pan-American cocktail party and reception in October, 1955, at the meeting of the American Academy of Ophthalmology and Otolaryngology, your Committee met and adopted a resolution defining its Aims and Scope:

"The function of this Committee is the furtherance of cordial relations and interchange of knowledge among the ophthalmologists of the Western hemisphere, through assistance to the Pan-American Association of Ophthalmology, and by such other means as may become desirable."

A letter announcing the V Pan-American Congress of Ophthalmology was prepared for circulation among the members of the Academy.

The Committee stands ready to assist the Pan-American Association of Ophthalmology in publicizing its IV Interim Congress, to be held in New York in April 1957.

The composition of the Committee on Pan-American Relations in Ophthalmology is changed as follows:

A. Deletion of name of Dr. Thomas D. Allen, a valued member of the Committee, whose loss is keenly felt by all.
B. Addition of the name of Dr. William C. Clark, New Orleans.

REPORT OF THE COMMITTEE ON PREVENTION OF BLINDNESS

RALPH I. LLOYD, M.D., Chairman

There has been no matter of importance during the past year which required consideration by the Committee.

REPORT OF THE COMMITTEE ON STANDARDIZATION OF TONOMETERS

PETER C. KRONFELD, M.D., Chairman

At the June 1955 meeting of this Committee, Dr. Jonas S. Friedenwald accepted the assignment of trying to remove some of the discrepancies found in the 1954 calibration scale for Schiøtz tonometers. Shortly afterwards he became aware of the fatal nature of an illness from which he had been suffering for only a few months. By devoting all his energies to a cause that had been very dear to him most of his professional life, he arrived, within three short months, at a refined

calibration scale which he submitted to the Committee on October 1, 1955, with the hope "that the new tables represent a closer approach to the truth" and with the request for further empirical validation by the Committee.

Fortunately, some of these validation data could be related to him when he was still in full possession of all his mental powers. Thus tonometric data may have given him a feeling of ultimate achievement and satisfaction during the last few days of his conscious life. On November 5, 1955, the death occurred of the man who had been the central figure in American tonometry since 1937 and the backbone of this Committee since its very founding.

The new scale proposed by him (hereafter designated the 1955 scale) has been applied to a large series of paired measurements (measurements with two weights on the same eye) and proves to be self-consistent to a higher degree than any previous calibration scale. The Committee, therefore, feels that Dr. Friedenwald's hope of the "new scale representing a closer approach to the truth" is justified, that it should be accepted and published with the official approval of the Committee in the TRANSACTIONS of the American Academy of Ophthalmology and Otolaryngology, together with an explanatory note signed by the Committee.

The Committee concurs in Dr. Friedenwald's belief that the problem of calibration is not completely solved and looks forward, with keen interest, to the results of Dr. W. Morton Grant's continued and extended calibration studies.

TONOMETER TESTING

The work of the testing stations has continued along previously established lines. Close rapport with the American manufacturers has made possible the recognition and elimination of some structural weaknesses in current tonometer models. A detailed report is attached.

The testing station located heretofore at the Illinois Eye and Ear Infirmary of the University of Illinois in Chicago was moved to the Department of Ophthalmology of Western Reserve University in Cleveland. Dr. Elmer J. Ballintine is in charge of the new station.

FOREIGN TESTING STATIONS

The German and Swiss testing stations have been very active during the past year. While the specifications of the American Committee have, in general, been accepted by the foreign stations, there has been a considerable trend toward refinement of the measuring methods and narrowing of the specifications. Particularly for the definition of the zero point of the tonometer and for the measurement of friction between handle and sleeve, recommendations have been made for more precise wording and stricter requirements. The German testing stations have obtained assurance from German manufacturers that tonometers meeting narrower specifications than those of the American Committee can be produced at a reasonable price in Germany.

Some American-made and ETL-certified tonometers have been tested in European testing stations and found not to meet certain requirements, particularly that of "negligible" friction between handle and sleeve. To what extent further additions or refinements of the existing specifications are desirable from the standpoint of clinical tonometry will be the principal item on the agenda of this Committee at its annual (October 1956) meeting.

CERTIFICATION OF TONOMETERS

Certification of tonometers by the Electrical Testing Laboratories, Inc. (ETL) has been continued along previously established lines. A detailed report is attached. [On file in Academy office.]

The general attitude of the ETL may be described as a trend toward simpler, faster and less costly methods of measurement. This trend is supported by the American manufacturer who is interested in keeping the price of the instrument down. A meeting of the Committee with the Staff of the ETL has been scheduled for December 2, 1956. The chief item for consideration will be the more accurate methods of measurement which are used in the German and Swiss testing stations.

Meetings of the subcommittees on electronic tonometers were held in Chicago on October 11, 1955 and June 12, 1956. The views of the manufacturer and of the testing laboratories were carefully considered, and a number of changes were made in the specifications.

MEMBERSHIP

Dr. Conrad Berens was appointed a member of the Committee.

There still remain a good many unsolved problems in the field of standardization of tonometers. It would, therefore, seem desirable that the activities of this Committee be continued.

REPORT OF COMMITTEE ON THE STUDY OF AUDIO-VISUAL EDUCATION

DEAN M. LIERLE, M.D., Chairman

The motion pictures sponsored by the Academy are used in a number of medical schools and hospitals here and abroad. The copies or prints are sold at cost on order. The Embryology of the Eye sells for $250.00, and Embryology of the Ear for $500.00. Fifty-nine prints of the Eye film have been sold, and eleven prints of the Ear film have been sold. The McNally Committee has selected 200 pictures of material prepared for the film to be made up into sets of slides or pictures for mounting. The cost of preparing the material and making negatives was $2,500.00; one half has been paid. The slides and pictures will be on display at this meeting, and the Committee will seek comment from teachers as to which they prefer. The cost of a set of 200 slides, 35 mm. color transparencies in 2 × 2 cardboard mounts, will be $100.00.

The Council, in October 1955, approved the proposal that the Committee on Audio-Visual Education review films in the field of ophthalmology and otolaryngology and give a statement of approval to the author or producer or both. The Council also authorized the Committee to permit the author to add a film strip stating that the film is approved by the American Academy of Ophthalmology and Otolaryngology. The Committee has worked out a plan for this purpose, but lack of space and equipment has made it necessary to defer action.

REPORT ON THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

M. ELLIOTT RANDOLPH, M.D.
Academy Representative

As representative of the American Academy of Ophthalmology and Otolaryngology to the American Association for the Advancement of Science, I have nothing to report which would be of any interest to the Academy.

REPORT ON THE AMERICAN BOARD OF OPHTHALMOLOGY

ALSON E. BRALEY, M.D.
Senior Representative

One hundred eleven examinations have been held to the present date. The total number of certificates issued have been four thousand four hundred sixty-three (4,463).

The 1956 written qualifying test was changed somewhat over that of past years. The present examination is a comprehensive test which is divided in two portions. The first portion is given in the morning and the second in the afternoon. The written examination was given on January 23, 1956, in twenty-four cities. Two hundred seven applicants took the examination; of this number, one hundred seventy-one passed and thirty-six failed. Because of the type of examination given, there were no conditions.

There have been one hundred seventy-six applications received during the past fiscal year. This represents a decrease in the number of applicants over previous years. A study is being conducted to determine some of the reasons for the decrease in applications to the American Board of Ophthalmology.

Dr. Georgiana Dvorak Theobald, a Consultant for the American Board of Ophthalmology, and her committee have made available pathology slides for study. There are one hundred two sets of these slides. These have been rented to one hundred seventy individuals.

In 1955, a practical examination was given in Philadelphia from May 26 to May 30. At this examination one hundred three candidates were passed and ten were failed.

The next examination was held in Chicago, Illinois, on October 4 to 7. At this examination ninety-two candidates passed the examination and eight failed.

The last examination to be given was in San Francisco, California, on June 18 to 21, at which there were one hundred three candidates passed and eleven failed.

Practical examinations are scheduled for 1956 in St. Louis on October 20 to 23.

Other examinations will be given in New York, June 23 through 27, 1957, and in Chicago in October 1957, probably preceding the Academy Meeting.

To date there are fifty-five ophthalmologists who have served on the Board of Ophthalmology. Your American Board of Ophthalmology was organized in 1916. There are twelve members of the American Board of Ophthalmology and four Consultants; however, beginning January 1, 1957, there will be five consultants with Dr. Walter Atkinson's appointment.

The officers of the American Board for 1955 to 1956 are Dr. B. F. Payne, Chairman; Dr. B. Fralick, Vice-Chairman; and Dr. M. J. King, Secretary-Treasurer.

The following members now serving on the

Board represent the Section of the American Medical Association: Drs. Brittain F. Payne, John McGavic, James Allen and Michael Hogan. Since this is the final year for Dr. Payne, the member-elect selected by the American Medical Association Section is Dr. C. W. Rucker.

The American Ophthalmological Society is represented by Drs. Francis H. Adler, Walter Atkinson, M. J. King, and Paul Chandler. Since Dr. Atkinson is serving his final year, Dr. H. J. Joy has been appointed as the member-elect of the American Ophthalmological Society.

The Academy is represented by Drs. Kenneth Swan, Bruce Fralick, Gordon Bruce and myself.

The Consultants are Drs. Georgiana Theobald, Frederick Cordes, Conrad Berens and William Benedict, and beginning January 1, 1957, Dr. Walter Atkinson.

REPORT ON THE AMERICAN BOARD OF OTOLARYNGOLOGY

FRANCIS E. LEJEUNE, M.D.
Senior Representative

The American Board of Otolaryngology held a meeting at the Sheraton Mt. Royal Hotel, Montreal, Canada, May 6-9, 1956. A total of 49 candidates were examined: 35 passed, 11 conditioned, and 3 failed.

At this meeting Dr. Gordon Hoople of Syracuse, New York, was elected president; Dr. Bernard McMahon of St. Louis, vice-president; and Dr. Dean M. Lierle was reappointed secretary-treasurer.

Dr. William Huffman and Dr. Clair Kos of Iowa City, Iowa, Dr. James Moore of New York City, and Dr. Walter Work of San Francisco were named as assistants to the Board.

* * *

The American Board of Otolaryngology held a meeting at the Palmer House, Chicago, Illinois, October 8-12, 1956. A total of 73 candidates were examined: 46 passed, 19 conditioned, 8 failed.

Dr. George F. Reed of Boston, Massachusetts, was appointed as a member of the Board.

REPORT ON THE BOARD OF GOVERNORS OF THE AMERICAN COLLEGE OF SURGEONS

DERRICK VAIL, M.D.
Academy Representative

The past year has been of great importance to ophthalmology in the American College of Surgeons. A four-day sectional meeting held in Philadelphia, February 13 through 16, attracted a large audience, in fact larger than at some annual surgical meetings. There were 2,204 surgeons and 831 nurses registered. The attendance at the meeting of the ophthalmologists was extremely good and was so large that they had to be moved into larger quarters. The program of the ophthalmologic section was exceptionally good. A symposium on recent advances in ophthalmologic surgery, under the chairmanship of Harold G. Scheie, was participated in by Angus McLean, Paul Chandler, Wendell Hughes, Charles Schepens and Townley Paton. A symposium on management of exophthalmos, under the chairmanship of Albert D. Ruedemann, was shared in by Lorenz E. Zimmerman, William Jefferies and John W. Henderson. A formal address by Paul Chandler was given after the banquet on February 16. Excellent clinics were held at several hospitals in the morning.

Since the annual congress of the College occurs either during the week before or the week after the meeting of the American Academy of Ophthalmology and Otolaryngology, it has been decided that ophthalmologic meetings be held during the various section meetings of the College, with perhaps only a token meeting during the Congress.

The Board of Governors has held several meetings during the last year, the most important, perhaps, was that held during the fall meeting of the Congress in Chicago.

Charles C. Higgins, M.D., is the Chairman of the Board of Governors, and in his report, dated April 4, 1956, he pointed out that there are representatives of twenty-eight general and specialty societies on the Board of Governors. Of these 13.5 per cent are otolaryngologists or ophthalmologists as against 12 per cent of the population of the College as a whole. The Board of Regents will be increased to twenty members by 1958. "It is therefore apparent," said Dr. Higgins, "that equitable representation of surgical specialists is present on the Board of Regents and will continue in the future."

The following is a statement by Dr. I. S. Ravdin, Chairman of the Board of Regents, of interest to members of the Academy:

"Surgical Specialists and the College (from the Bulletin, American College of Surgeons, March-April, 1956). Despite repeated assurances that the American College of Surgeons is deeply interested in every field of surgery, the old charge is occasionally made that the College is primarily an organization of general surgeons. Two years ago, the Board of Regents amended the bylaws for the sole

purpose of providing adequate representation of surgical specialists in the governments of the College. At its recent meeting, the Board of Regents issued the following statement of policy, and has taken steps to place it in effect: 'The Board of Regents regards the American College of Surgeons as the common forum of all qualified persons who do surgery. In support of this, the Board of Regents concurs in the policy of the Board of Governors that the surgical specialties be adequately represented in the government of the College; and will exert every effort to insure that the programs of the College meet the needs of surgical specialists as well as of general surgeons. The Regents of the College are elected by the Governors. Advisory councils will be established in each surgical specialty as rapidly as possible; and surgical specialists, through their representative societies, will make the nominations for membership upon such councils. Each advisory council will advise the Board of Regents upon all matters pertaining to its specialty, such as requirements for Fellowship, scientific programs, and facilities for graduate and postgraduate education. Advisory councils will meet at least once annually, at the expense of the College, to consider the interests of their respective specialties and to formulate recommendations to be made to the Board of Regents.'"

During the year the College has changed its classification from Ophthalmology to Ophthalmic Surgery. The new requirements for admission as an ophthalmic surgeon to the College are now very high indeed and should enhance the value and prestige of such fellowship. They probably will have far reaching effect upon the training and education of the ophthalmic surgeon.

Finally, the Board of Regents adopted the following statement of ethics, which will apply to Fellows admitted to the College in the classification of Ophthalmic Surgery:

"1. The dispensing of glasses should be considered in the same light as that of writing prescriptions for medicine or in the light of the relationship between the orthopedist and the brace-maker.

"2. Ophthalmologists cannot ethically provide glasses for their patients unless the service is unavailable without hardship or inconvenience to the patient.

"3. It is unethical for ophthalmologists to profit from the sale of glasses.

"4. Ophthalmologists cannot derive income from merchandising and still be considered on a professional level.

"5. Ophthalmologists may not accept rebates from optical houses.

"6. It is unethical for an ophthalmologist to profit from the services of an optician, working either in his office or on a referral basis.

"*7. Fee splitting, in any form, is unethical whether it be with a physician, optician, optometrist, or a firm engaged in furnishing instruments, drugs, apparatus, laboratory work or roentgen-ray examination for an ophthalmologist.

"This Statement was taken verbatim from a resolution prepared originally in 1954 by a Joint Committee of the Section on Ophthalmology of the American Medical Association, the American Academy of Ophthalmology and Otolaryngology and the American Ophthalmological Society. This resolution was adopted by the House of Delegates of the A.M.A. in December 1954, but was rescinded by the House of Delegates in June 1955.

"*The principles expressed in this provision apply equally to all Fellows regardless of their field of surgical practice."

Since my term of office as a member of the Board of Governors of the American College of Surgeons, representing the American Academy of Ophthalmology and Otolaryngology, expires this year, I should like to express my thanks and appreciation to this society for the privilege of representing it on the College of Surgeons, an organization of great importance to ophthalmology.

Addendum:

From Shirley Harold Baron, M.D.
October 15, 1956

This is to inform you that there was nothing in the proceedings of the Board of Governors of the American College of Surgeons that was especially relevant to the American Academy of Ophthalmology and Otolaryngology during the meetings held in San Francisco last week.

It might interest you to know that Dr. Frederick C. Cordes was elected to the Board of Regents of the American College of Surgeons.

REPORT ON AMERICAN COMMITTEE ON OPTICS AND VISUAL PATHOLOGY

JAMES E. LEBENSOHN, M.D.
Senior Representative

Since the last report to the American Academy of Ophthalmology and Otolaryngology,

the American Committee on Optics and Visual Physiology has held two meetings. Its sixty-seventh meeting was held on June 2, 1955, at Greenbrier, White Sulphur Springs, West Virginia, and its sixty-eighth meeting was held in Chicago at the Palmer House on October 9, 1955. The American Academy of Ophthalmology and Otolaryngology's representatives are Dr. Kenneth C. Swan, Dr. Frederick C. Cordes and Dr. James E. Lebensohn.

The most important actions taken by the American Committe on Optics and Visual Physiology at these two meetings are:

1. The American Committee on Optics and Visual Physiology voted unanimously at their meeting to withdraw from the National Committee on Eye Care in accordance with the directives in the resolution of the Section on Ophthalmology adopted by the House of Delegates of the American Medical Association.

2. Doctor Hughes' Subcommittee on Contact Lenses reported that the advertisement of Benjamin D. Ritholz and the Chicago Invisible Lens Service was no longer accepted by the Archives of Ophthalmology.

3. The Subcommittee to Cooperate with the Council on Physical Medicine appointed Drs. Burian, Owens, Ogle, Swan, Hughes and Vail (ex officio). Doctor Burian was appointed Chairman and will act as liaison between the Council and the American Committee.

The Variable Color Near Point Grid Card submitted by Nat R. Goldberg was not acceptable to the Committee. The Freeman Acuity Test was not accepted because of poor construction, doubt as to accuracy, and claims in advertising and labeling that were not substantiated.

4. After studying the report of Doctor Sloane regarding the Visual Survey of School Children, the Committee agreed that it should not recommend any particular testing device.

Doctor Sloane has written a paper for the layman on School Vision which has been sent to Today's Health for publication.

5. The Committee requested that a report be furnished annually by the Committee on Study of Procedure for Screening Test for Color Vision as to which is the best pseudo-isochromatic test chart.

It was voted that further studies be made in this field and that other tests such as the Lantern test be included. It was voted that $1,000 be requested from the American Academy for this specific research project.

6. Doctor Fonda of the Subcommittee on Low Vision Lenses reported the use of a microscopic bifocal in strengths of 10 and 14 magnification. This unit consists of a Hastings triplet cemented into a plastic lens. The field of magnification is surprisingly large for the size of the triplet. Only five pairs have been prescribed, so no evaluation can be made at the present time.

The Ophthalmic Lens Division of the American Optical Company is manufacturing magnification reading bifocals in the various powers, + 8.00, + 16.00, + 24.00 and + 32.00, and a microscopic bifocal of + 40.00 diopters. It has the advantage of a bifocal, is inconspicuous, and is not too expensive.

7. Dr. Saul Sells' report on Myopia Training Research was read and accepted. It appeared that the tachistoscopic training did improve vision in some cases, as compared with the controls. The duration of the improvement was not known.

8. Doctor Cowan's report for the Subcommittee on Standardization of Ophthalmic Lenses was accepted:

a. Ophthalmologists are not concerned with technicalities involved in making a pair of glasses. These are standards of the manufacturer which must be established by him and the dispenser. The Committee, however, urges that the manufacturer set up standards for first quality ophthalmic lenses which will be universally accepted as such, and that these lenses be labeled. It was suggested that included in the specifications for a first-class lens, the base curves and vertex refraction be standardized. If the lenses are sent out in an unfinished state, the dispenser should carry out the requirements to the end.

b. The ophthalmologist should indicate in his prescription whether the glasses are to be adjusted for near, distance, constant use, the color and shade if they are to be tinted, and any other particular features he desires.

c. Each lens should be clear white glass (except when tinted glasses are indicated), free from bubbles, scratches or any other defects. Surface must be regularly smooth, properly polished, and show no faults by careful examination. The power of the sphere and the cylinder, the axis, and the prismatic power of each lens must all conform to the prescription as nearly exactly as can be determined by available first-class means of examination. Fused bifocal or trifocal segments must show no flowing. Edges of segment must be sharply defined.

d. When there is a material difference between the shapes of the two corrective lenses or when perfect symmetry is not possible, necessary allowances and tolerances

must be a matter of determination in each instance.

e. To the ophthalmologist, the quality, accuracy, fit and appearance of the finished glasses are all important. Only by complying with the above specifications can they be considered acceptable.

9. The report of the Subcommittee for Determination of Extent of Impairment of Vision for Industrial Use was submitted by Doctor Hughes. Several revisions of the "Estimation of Loss of Visual Efficiency" took place following the suggestions of the Council of the Section on Ophthalmology of the American Medical Association and the Council of Industrial Health, which requested the revision originally. The changes since the last report are:

a. Best corrected vision with regular ophthalmic lenses (not contact lenses), if these are necessary, should be used in calculation of visual acuity.

b. All reference or material related to compensation were deleted because:

1. This report may have applications outside the problems of industrial compensation.
2. Regulations and laws concerning compensation vary widely and such problems are not within the province of the Estimation of Loss of Visual Efficiency.

10. The Committee voted that the history of the American Committee on Optics and Visual Physiology, with major results, be prepared for publication in one of the ophthalmic journals. Mrs. Helen Sells has agreed to do this and expects to have the article ready to present at the meeting in May.

11. A subcommittee consisting of Colonel Byrnes, Chairman; Doctors Burian, Kauffman, Rudolph and Regan was appointed to make a study of the use of atropine in myopia.

12. The Subcommittee on Terminology of Motor Anomalies reported that the Committee is working on a glossary and anticipates that by next summer it will be completed and ready for comments.

13. Doctor Ogle, as Chairman of the Subcommittee for Standardization of the Terminology of Optics and Visual Physiology, is working on a glossary of terms.

14. The resignation of Dr. Alfred Cowan was accepted with regret, and it was voted that a letter be sent to the Academy informing them of Dr. Cowan's resignation and suggesting the appointment of Dr. James E. Lebensohn of Chicago to replace Dr. Cowan.

Your Committee respectfully recommends:

1. That the American Academy of Ophthalmology and Otolaryngology continue its sponsorship of the American Committee on Optics and Visual Physiology.

2. That the American Academy of Ophthalmology and Otolaryngology continue its financial support to the American Committee on Optics and Visual Physiology in the amount of $200 a year for general secretarial and office expenditures.

3. That Dr. James E. Lebensohn be reappointed as representative of the American Academy of Ophthalmology and Otolaryngology.

REPORT ON THE AMERICAN ORTHOPTIC COUNCIL

PHILIP KNAPP, M.D.,
JOHN W. HENDERSON, M.D., and
FRANK D. COSTENBADER, M.D.
Academy Representatives

The twenty-first annual meeting of the American Orthoptic Council was held in Chicago on October 8, 1955, with Dr. Hermann M. Burian, President, presiding. The actions of the Council and its subsequent activities are reported below.

During the year 1955, the American Academy of Ophthalmology and Otolaryngology was represented by Dr. Frank D. Costenbader, Dr. Philip Knapp, and Dr. John W. Henderson. Dr. Costenbader is serving as chairman of the Committee on Examinations and as a member of the Committee on Ethics. Dr. Knapp is serving as chairman of the Committee on Publications and Exhibits and as a member of the Committee on Examinations. Dr. Henderson is serving as a member of the Committee on Instruction, and of the Committee on Nominations.

The significant activities of the American Orthoptic Council for the year 1955-56 have been:

1. The continuation of the annual two-month intensive course in orthoptics for orthoptic technicians. In the summer of 1955 the course was again held in Iowa City, under the direction of Dr. Hermann M. Burian. Several members of the American Orthoptic Council acted as instructors. Twenty-three students were enrolled. The training of a sufficient number of orthoptic technicians continues to be a problem, and the demand for technicians still exceeds the supply. The orthoptic course offered by the Council helps to fill the need, and it is hoped that in the future more prospective students will take advantage of the course.

2. The annual examination of orthoptic technician candidates was conducted by the Council in October 1955. Thirty of the thirty-two candidates completed the examination successfully and were certified by the Council.

3. The annual meeting sponsored by the American Orthoptic Council and the American Association of Orthoptic Technicians in conjunction with the American Academy of Ophthalmology and Otolaryngology was held in October 1955 and took the form of a symposium. The subject was "Amblyopia," and the speakers included Dr. Hermann M. Burian of Iowa City, Dr. Maynard Wheeler of New York, and Miss Frances Fowler of Palo Alto, California. Dr. William E. Krewson, III, of Philadelphia acted as moderator.

4. Under Dr. Hermann M. Burian's direction, work is continuing on the revision of the orthoptic teaching syllabus and it is expected that this will become available during 1957. It is hoped that the syllabus may eventually be expanded into an orthoptic textbook.

5. The instruction courses for orthoptic technicians given at the time of the American Academy of Ophthalmology and Otolaryngology meeting, and presented by ophthalmologists and orthoptic technicians, were enthusiastically received. The continued interest on the part of certified technicians in postgraduate refresher courses is encouraging.

6. The American Association of Orthoptic Technicians reports that regional meetings of the Association were held in the spring of 1955 in Tampa, Florida; Philadelphia, Pennsylvania; Vancouver, British Columbia; and Milwaukee, Wisconsin. All were well attended and enthusiastically received. In addition, the Association sponsored orthoptic exhibits at the following national meetings:

   The National Society for the Prevention of Blindness, New York

   The American Academy of Pediatrics, Detroit and Chicago

   The American Congress of Physical Medicine and Rehabilitation, Detroit

   The American Academy of Ophthalmology and Otolaryngology, Chicago

   The Lancaster Award Medal was presented this year to Miss Elizabeth Jackson of Erie, Pennsylvania.

7. The sixth issue of the American Orthoptic Journal is being readied for distribution under the editorship of Dr. William E. Krewson, III. The Journal is published through the cooperation of the American Academy of Ophthalmology and Otolaryngology and is distributed through its TRANSACTIONS. The 1956 Journal is expected to be the largest yet published.

8. The need for a new informative booklet on orthoptics as a profession was recognized by the Council. A brochure was prepared and received enthusiastic acceptance. A single copy of the brochure was mailed to all junior colleges and to vocational guidance counselors, in the hope of stimulating an increased interest on the part of prospective students in the field of orthoptics. Copies of this brochure are available on request to the Secretary's office.

Officers elected to serve in 1956 are:

President, Dr. Hermann M. Burian, Iowa City
Vice-President, Dr. William E. Krewson, III, Philadelphia
Secretary-Treasurer, Dr. Edmond L. Cooper, Detroit

The American Orthoptic Council is appreciative of the continued interest and support of the American Academy of Ophthalmology and Otolaryngology.

Your committee respectfully recommends:

1. That the American Academy of Ophthalmology and Otolaryngology continue its sponsorship of the American Orthoptic Council and that it appoint Dr. Philip Knapp of New York City for a period of three years, beginning January 1, 1957.
2. That the American Academy of Ophthalmology and Otolaryngology continue its financial support of the American Orthoptic Council in the amount of $100.00 for the year 1957.

REPORT ON COMMITTEE FOR STANDARDIZATION OF OPHTHALMIC LENSES

CARL J. RUDOLPH, M.D.
Academy Representative

In view of the fact that the American Committee on Optics and Visual Physiology and the American Academy of Ophthalmology and Otolaryngology have each appointed a Lens Standard Committee with my name on each and as chairman of the first, it was mandatory on my part to fulfill this responsibility by receiving an indoctrination at the manufacturers level so as to better understand their way of thinking and the problems that exist at this level. This recognition was accorded me because of the work I have done on a state level.

Following is a brief review to bring the subject up to date: It was in September 1955, as chairman of the Indiana Interprofessional Committee, that I was instrumental in having Mr. S. David Hoffman of New York City, an attorney and Secretary of the American Standards Association, to sit in on one of our meetings at the Columbia Club in Indianapolis. Mr. Hoffman was quite favorably impressed. Needless to say, his enthusiasm was contributed to considerably by the fact that he had received a copy of the British Standard of Ophthalmic Lenses, which had been consummated but a short time before.

The American Standards Association called a meeting of all interested parties in New York City on March 5, 1956, at the request of the Indiana Interprofessional Committee. The interest and enthusiasm manifested at this meeting was beyond our fondest expectation. I counted forty-five at the meeting. Names of organizations represented are listed in the minutes of the meeting which I sent to Dr. William L. Benedict and Dr. Conrad Berens and which can be made available to this organization.

On July 6 and 7 of this year I made a trip to Southbridge, Massachusetts, and visited the plant of the American Optical Company. On August 22 and 23 I visited the Bausch and Lomb plant in Rochester, New York, where I was joined by Drs. James Lebensohn and Gerald Fonda, also representing the Lens Standard Committee appointed by the American Committee on Optics and Visual Physiology. In each instance, everyone from the most lowly factory worker up to and including the president was most solicitous and willing to be of assistance. This created a much better understanding between two groups so widely separated in the Eye Care field, but still having so much in common as an objective at the patient level.

In establishing a standard for ophthalmic lenses in this country, it shall be necessary for our requirements to compare favorably with those of other countries as they are formulated. The standard, on the other hand, cannot be so high as to make the cost of lenses prohibitive to the consumer. Lax standards would encourage manufacturers who do not have a reputation to maintain, as they would ride along on the apron strings of a minimal requirement. This also would encourage even more Japanese and German imports.

The standard of ophthalmic lens is of great concern to the optical manufacturer. Some have a six-base curve in their better lens, and others something similar. Corrected curve lenses and methods of testing which can be carried to an extreme also cause them some apprehension.

In standardizing an ophthalmic lens, the policing action must come first, obviously at the factory level, which is the easiest to check upon. If inferior materials are filtered down to the dispensing level, the consumer is compromised immediately.

Admittedly, the best lens can be compromised at the dispensing level, and it is at this point that any type of policing action would be made most difficult. The ophthalmologist using the services of a dispensing optician naturally would boycott him if service or materials could be detected as inferior. I understand this is an extremely effective weapon which seldom needs to be used.

Many states have given a policing action to standards by approving A.S.A. standards in other products as those endorsed by the state. This may eventually apply to lens standards; if so, this would materially interfere with nefarious groups merchandising on human ills. Insomuch as the public's eyes are not protected to the same extent as its tummy through the medium of the Pure Food and Drug Act, this may be a good thing.

It appears necessary, if we are to encourage our own manufacturers in research and the improvement of their products, that they should receive due credit and encouragement by the use of their products.

THE INTERNATIONAL ASSOCIATION OF SECRETARIES OF OPHTHALMOLOGICAL AND OTOLARYNGOLOGICAL SOCIETIES

Minutes of Annual Meeting
October 16, 1956

The Seventeenth Annual Meeting of the International Association of Secretaries of Ophthalmological and Otolaryngological Societies was held at the Palmer House in Chicago at 5:30 p.m., Tuesday, October 16, 1956, in conjunction with the Annual Convention of the American Academy of Ophthalmology and Otolaryngology, the Association being the dinner guests of the Academy.

Following dinner the meeting was called to order by the President, Dr. Willard F. Goff, of Seattle, Washington, who welcomed more than forty secretaries from many states, Canada, Puerto Rico, Lebanon, Brazil and Argentina. Each secretary introduced himself, naming the society he represented.

Since the minutes had been printed in the November-December 1956 issue of the TRANSACTIONS of the American Academy of Ophthalmology and Otolaryngology, it was moved, seconded, and unanimously carried that the minutes not be read but be approved as printed.

The President made a few brief remarks on the progress of the Association in the field of international friendship, reporting that there are 126 ophthalmological and/or otolaryngological societies in the United States, and 88 in 44 other countries. He briefly reviewed the tenure of former Presidents and Secretaries.

He also announced that letters had been received from Drs. William John Holmes of Honolulu, T. Nishihata of Tokyo, E. Filippi Gabardi of Bologna, and P. G. Binkhorst of Bilthoven, sending their greetings and regretting that they were unable to attend. He also read a telegram of regret from Editor Paul Craig, who was unable to attend the meeting because of illness. By motion, duly seconded and unanimously carried, the Secretary was directed to extend the Association's regrets to Dr. Craig.

The Secretary reported a total of 67 paid members of the Association, and a cash balance of $776.02.

The President complimented Dr. Daniel DeStio on the excellent arrangements made for the meeting, announcing that Dr. DeStio was also serving as Sergeant-at-Arms.

Dr. James Monahan reported that the Auditing Committee, consisting of Drs. John F. Tolan, Lewis E. Morrison and himself, had audited the Treasurer's books and found them in order.

Dr. Roderick Macdonald reported that while the nominating committee consisted of Drs. Moacyr E. Alvaro, Dan DeStio and himself, he and Moacyr had ignored Dan, and wished to make the following nominations:

President-Elect: Daniel S. DeStio
Editor: Paul C. Craig
Secretary-Treasurer: Edley H. Jones
Active Directors (for 3 years): Lewis E. Morrison, to succeed himself, and R. J. Viger, to succeed Rene Charbonneau
Cooperative Directors (for 3 years): W. J. Hope-Robertson, to succeed himself, and William John Holmes, as a new Director

Following is a brief review to bring the subject up to date: It was in September 1955, as chairman of the Indiana Interprofessional Committee, that I was instrumental in having Mr. S. David Hoffman of New York City, an attorney and Secretary of the American Standards Association, to sit in on one of our meetings at the Columbia Club in Indianapolis. Mr. Hoffman was quite favorably impressed. Needless to say, his enthusiasm was contributed to considerably by the fact that he had received a copy of the British Standard of Ophthalmic Lenses, which had been consummated but a short time before.

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By a motion, duly seconded and carried, the Nominating Committee's report was accepted.

The Secretary called the Association's attention to the Survey of the Instructional Courses of the Academy. Blanks had been distributed in the registration hall. It was pointed out that the cooperation of all would be required for this Survey to reach the maximum of effectiveness. Everyone was encouraged to cooperate.

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Dr. Walter H. Theobald, Finance Chairman of the Congress, announced that only two thirds of the needed funds had been raised. He requested the secretaries to make additional contributions and to urge otolaryngologists to make additional contributions, so that the effectiveness of the meeting would not be hindered by inadequate finances.

Dr. Moacyr Alvaro, Executive Director of the Pan-American Association of Ophthalmology, called the secretaries' attention to the Interim Congress of the Pan-American Association of Ophthalmology with the National Society for the Prevention of Blindness, which will be held at the Hotel Statler, New York City, April 7-10, 1957, inviting all ophthalmologists to attend, and requesting the secretaries' cooperation in giving the meeting adequate publicity.

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Dr. Chevalier Jackson called the Association's attention to the International Directory of Otolaryngologists, showing the galley proofs and stating that the Directory would be published in the next few months. He stated that he was having some difficulty in financing this project and would welcome financial support, or any practical suggestions for obtaining additional financial support.

The Secretary presented an amendment to the By-Laws which would change the last sentence of the fourth paragraph of Article I on Membership to read, "Cooperative members may not vote or hold office other than that of Cooperative Director, and shall not be required to pay dues." The Council recommended the adoption of the amendment. By motion, duly seconded and unanimously carried, the Association adopted the amendment.

The Secretary reported that Dr. William John Holmes of Honolulu had made recommendations to the Association to aid Asia-Pacific ophthalmologists and otolaryngologists and improve friendly relations with that group; that these recommendations had been considered favorably by the Council and at its meeting the previous day; and that they were being passed on to the Association for action:

1. Offer the services of this Association in collecting reprints of scientific articles on ophthalmology and otolaryngology, and forwarding them to ophthalmologists and otolaryngologists in the Asia-Pacific area (presumably Dr. Holmes would arrange for their translation). The Association approved.

2. Continue to encourage teachers of ophthalmology and otolaryngology traveling in the Orient to make contacts in advance, and to address meetings of ophthalmological and otolaryngological societies on scientific subjects when requested to do so. The Association approved.

3. Dr. Holmes was interested in having "well trained young physicians" from Asia spend one or more years in resident training in ophthalmology or otolaryngology in the United States; and his attention was called to the advertisements in each issue of the Journal of the American Medical Association. If there were specific instances in which the Association could be of aid, the Association would gladly cooperate. The Association approved.

4. Recommend the formation of an Asia-Pacific Academy of Ophthalmology to the Executive Board of the International Congress of Ophthalmology. The Association approved.

Dr. Kenneth Craft took the floor to state that Dr. Sam H. Sanders, former President of this Association, was making a trip to Europe and suggested that he be appointed a good-will ambassador. There was some discussion, after which it was moved by Dr. Craft that the Presidents of this Association be authorized to designate prominent teachers of ophthalmology and otolaryngology traveling in other countries as goodwill ambassadors of this Association. The motion was seconded by Dr. DeStio and unanimously carried.

The President called on Dr. Dan DeStio who, in the name of the Association, presented to Dr. Kenneth Craft a certificate of Honorary Membership in this Association. In so doing Dr. DeStio reminded the Association that Dr. Craft had served as Secretary of this Association from the date of its organization in 1939 until 1950, and as President in 1950-51. In accepting, Dr. Craft said that this was certainly a surprise and indeed a very pleasing one. He took oc-

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The President arose to the personal privilege of a few "last remarks," stating that his year of service had been an inspiring one. He recalled that this Association had first been "American," but that under the leadership of Moacyr Alvaro and Jim Monahan it had become "Pan-American" and then "International." He stated that he believed there was a great future for this Association in the international field, and he urged the Association to continue every effort to improve international relations. He then presented the new President, Dr. Archie E. Cruthirds of Phoenix, Arizona, and Dr. Cruthirds adjourned the meeting.

EDLEY H. JONES, M.D.
Secretary-Treasurer

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News - - - Notes

XVIII INTERNATIONAL OPHTHALMOLOGICAL CONGRESS

The first International Ophthalmological Congress was held in Brussels in 1857. On the occasion of this centenary, the next congress will be held also in Brussels, September 8-12, 1958, under the presidency of Prof. Leon Coppez.

All ophthalmologists are cordially invited to attend, and it is hoped that a great number will come to Belgium, where that same year a great Universal International Exhibition will be taking place.

The main subjects chosen by the International Council are the following:

1. Orthoptic Treatment of Concomitant Strabismus, presented by Dr. A. Bangerter, St.-Gallen, Dr. T. R. Lyle, London, and Prof. J. Malbran, Buenos Aires.

2. Geriatrics in Ophthalmology, presented by Prof. M. Buerger, Leipzig, Prof. J. Francois, Ghent, Prof. G. Jayle, Marseille, and Prof. M. Jayle, Paris.

Symposia will be organized on Cataract, Radioisotopes in Ophthalmology, Electroretinography, and Glaucoma.

Sessions will be reserved for free communications.

The International Association for Prevention of Blindness and the International Organization Against Trachoma will hold meetings during the time of the Congress.

All correspondence and requests for information should be sent to the General Secretary, Prof. Jules Francois, 15, place de Smet de Naeyer, Gand, Belgium.

SIXTH INTERNATIONAL CONGRESS OF OTOLARYNGOLOGY

The date for the acceptance of papers and films for the program of the Sixth International Congress of Otolaryngology, in Washington, D. C., May 5-10, 1957, has passed and the scientific program has been completed. There are 238 papers that will be presented simultaneously in four sections during each General Session. These represent contributions from otolaryngologists in 35 countries and deal with a remarkably wide variety of subjects in the specialty.

Applications for the presentation of films have been sufficient to provide 18 hours of motion pictures which will run simultaneously with the presentation of scientific papers.

Forms for requesting hotel reservations in Washington have been distributed to all who have registered as Members of the Congress. Those wishing to register should communicate with the General Secretary, 700 N. Michigan Avenue, Chicago 11, Illinois, U. S. A. Applications for hotel accommodations will be sent as soon as registration is completed.

INTERNATIONAL CONFERENCE ON AUDIOLOGY

There will be an International Conference on Audiology in St. Louis beginning the afternoon of May 13 and continuing through May 16, 1957. The Conference will be included as part of tours 2 and 3 (to the Middle West and Far West) that are being planned in connection with the Sixth International Congress of Otolaryngology to be held in Washington, D. C., in May 1957.

The following themes will be discussed:

The Assessment of Auditory Function

The Physiology of Audition

The Relation of Hearing Loss to Noise Exposure

For information write to S. R. Silverman, Chairman, International Conference on Audiology, Central Institute for the Deaf, 818 South Kingshighway, St. Louis 10.

INTERNATIONAL VOICE CONFERENCE
(Laryngeal Research, Function, and Therapy)

Following the International Congress of Otolaryngology in Washington, D. C., next spring, there will be an International Voice Conference in Chicago, May 20-22, 1957.

For information address: Dr. Hans von Leden, 30 North Michigan Avenue, Chicago 2.

PAN-AMERICAN ASSOCIATION OF OPHTHALMOLOGY

The Pan-American Association of Ophthalmology has selected Caracas, Venezuela, as the meeting place for the VI Pan-American Congress, January 31 through February 7, 1960. The secretary general is Dr. R. Hernandez Miliani, and the president is Dr. Jesus Rhode, both of Caracas.

SEVENTH INTERNATIONAL CANCER CONGRESS
Sponsored by
The International Union Against Cancer

The Seventh International Cancer Congress will be held in London, England, July 6-12, 1958, under the presidency of Sir Stanford Cade. Congress headquarters will be The Royal Festival Hall.

There will be two main sessions of the Congress:

A. Experimental
B. Clinical and Cancer Control

Special emphasis will be placed on hormones and cancer, chemotherapy, carcinogenesis, and cancer of the lung.

Preferred papers will be considered only if submitted with an accompanying abstract (not over 200 words) before October 1957 and if dealing with new and unpublished work.

The registration fee for the Congress will be £10 (ten pounds) or $30 (thirty dollars), and the latest date for registration without late fee will be January 1, 1958.

Registration forms and a preliminary program will be available early in 1957 on application to The Secretary General, Seventh International Cancer Congress, 45 Lincoln's Inn Fields, London, W. C. 2, England.

THE AMERICAN OTORHINOLOGIC SOCIETY FOR PLASTIC SURGERY, INC.

The American Otorhinologic Society for Plastic Surgery will hold a Seminar in Plastic and Reconstructive Surgery of the Head and Neck at the State University of Louisiana in New Orleans, February 17-23, 1957.

The course will include didactic material and laboratory and operative procedures.

This course is open to all qualified specialists in otolaryngology and head and neck surgery as listed in the Directory of the American Medical Association. The faculty will be composed of eminent specialists in the field.

Program and further information may be obtained by communicating with Dr. Louis Joel Feit, Secretary, 66 Park Avenue, New York 16.

AMERICAN PUBLIC HEALTH ASSOCIATION
1956 ALBERT LASKER AWARDS

Seven scientists and two health groups were presented with the 1956 Albert Lasker Awards of the American Public Health Association at Atlantic City, N. J., November fifteenth.

Ranked among the nation's highest medical honors, the awards were conferred at the Association's 84th annual meeting in the Hotel Ambassador by Dr. Gaylord W. Anderson, Chairman of the Lasker Awards Committee and director of the School of Public Health, University of Minnesota.

Two of the 1956 winners are Dr. V. Everett Kinsey, assistant director of research, Kresge Eye Institute, Detroit, Michigan, and Dr. Arnall Patz, ophthalmologist, Baltimore, Md. They received a joint award for "distinguished achievement in discovering excessive oxygen administration to be the cause of retrolental fibroplasia in prematurely born babies."

Dr. Kinsey and Dr. Patz have pursued original, well-controlled studies in the cause and prevention of retrolental fibroplasia in prematurely born babies. As a physician in private practice, Dr. Patz used his own resources to ascertain for the first time that "routine high oxygen levels" were the cause of blindness in many of these infants. Dr. Kinsey subsequently "coordinated an investigation, involving eighteen hospitals and seventy-five ophthalmologists and pediatricians, which produced conclusive and definitive proof of the relation between high oxygen concentrations and this blinding con-

dition." In the United States alone, the results of this research should prevent blindness in several hundred prematurely born infants each year.

ASSOCIATION FOR RESEARCH IN OPHTHALMOLOGY: EASTERN SECTION

The next meeting of the Eastern Section of the Association for Research in Ophthalmology will be held at the Wilmer Institute of the Johns Hopkins Hospital, in Baltimore, on April 27, 1957.

Anyone wishing to present a paper before the Section is urged to communicate with Dr. Howard Naquin, Johns Hopkins Hospital, Baltimore 5, as soon as possible. A title and abstract, not to exceed 600 words, must be submitted before January 1, 1957. Speakers will be limited to a maximum of fifteen minutes.

Papers can be presented at the Eastern Section Meeting as well as at the national meeting in New York City in June.

NATIONAL COMMITTEE FOR RESEARCH IN OPHTHALMOLOGY AND BLINDNESS

A National Committee for Research in Ophthalmology and Blindness was recently formed by representatives from the four national ophthalmic societies. Members of the committee are Bernard Becker, Washington University, and A. Edward Maumenee, Johns Hopkins University, representing the American Academy of Ophthalmology and Otolaryngology; Michael J. Hogan, University of California, and Albert D. Ruedemann, Sr., Wayne University, representing the American Medical Association, Section on Ophthalmology; Alson E. Braley, University of Iowa, and David G. Cogan, Harvard University, representing the American Ophthalmological Society; and Irving H. Leopold, University of Pennsylvania, and Frank W. Newell, University of Chicago, representing the Association for Research in Ophthalmology.

The Committee plans to stimulate increased interest in ophthalmic research and to cooperate with, and act as an advisory group to, all persons and agencies interested in blindness, the prevention of blindness, vision, and research in the basic disciplines of ophthalmology.

CALIFORNIA

Stanford University School of Medicine will present the Annual Postgraduate Conference in Ophthalmology March 18-22, 1957. Registration will be open to physicians who limit their practice to the treatment of diseases of the eye; or eye, ear, nose and throat. In order to allow free discussion by members of the conference, registration will be limited to thirty physicians.

Instructors will be Dr. David L. Basset, Dr. Jerome W. Bettman, Dr. Max Fine, Dr. Earle H. McBain, Dr. Arthur J. Jampolsky, and Dr. Dohrmann K. Pischel.

Programs and further information may be obtained from the Office of the Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15.

OHIO

Ohio State University, Columbus, Ohio, announces a Postgraduate Course in Ophthalmology to be held in the Ohio State Union Building Conference Theater, on the University campus, March 4-5, 1957.

Speakers will be Francis H. Adler, M.D., University of Pennsylvania; George J. Hamwi, M.D., Ohio State University; John W. Henderson, M.D., University of Michigan; William E. Hunt, M.D., Ohio State University; Jay Jacoby, M.D., Ohio State University; Alfred E. Maumenee, M.D., Johns Hopkins University, and Ted Suie, Ph.D., Ohio State University.

The registration fee is $20.00. Registration by mail is desirable.

Address all inquiries to William H. Havener, M.D., Department of Ophthalmology, University Hospital, Columbus, Ohio.

TEXAS

The Dallas Southern Clinical Society has announced the 1957 Honor Guests of the Spring Clinical Conference to be held March 18-20, 1957, at 433 Medical Arts Building, Dallas. Among those to be honored are two ophthalmologists: Dr. Walter H. Fink, Minneapolis, and Dr. R. Townley Paton, New York; and two otolaryngologists: Dr. John J. Conley, New York, and Dr. Peter N. Pastore, Richmond, Virginia.

BRITISH COLUMBIA OTO-OPHTHALMOLOGICAL CONFERENCE

The British Columbia Oto-Ophthalmological Conference will be held in Vancouver, B. C. May 23-24, 1957. Guest speakers will be Dr. Alston Callahan of Birmingham, Alabama, in Ophthalmology, and Sir Victor Negus of London, England, in Otolaryngology. Members of neighboring Eye, Ear, Nose and Throat Societies are cordially invited to attend.

Secretary for the Conference is Dr. Derek G. Simpson, 622-925 West Georgia Street, Vancouver 1, B. C., Canada.

IRELAND

The Society of British Neurological Surgeons has accepted the invitation of the Irish Ophthalmological Society to a combined meeting of both Societies to be held in Dublin, May 16-18, 1957.

Dr. Frank Walsh (Baltimore) will deliver the Montgomery Lecture, "Third Nerve Regeneration: Clinical Evaluation." A symposium on "The Blood Supply of the Chiasma and Optic Nerves" will have as openers, Professor Francois (Ghent), Professor Erskine (T.C.D.) and Professor Brodie Hughes (Birmingham). Professor Chamlin (New York) will speak on "Visual Function in X-Ray Treatment of Pituitary Tumors."

The Council of the Irish Ophthalmological Society extends a cordial welcome to anyone wishing to attend this combined meeting. Registration fee is half a guinea. Please notify the Secretary, Dr. L. B. Somerville-Large, 2 Fitzwilliam Place, Dublin, at the earliest possible date so that invitations, which are limited, can be issued.

POSITIONS AVAILABLE

OTOLARYNGOLOGIST—To take care of ear, nose and throat service of a well-established EENT practice in a rapidly growing community of 175,000 in southeast Virginia. All new and modern equipment in office. For details, write to Dr. James W. Phillips, 301 Masonic Temple Building, Newport News, Va.

Otolaryngologist wanted by well-established thirty-man specialty group in central Wisconsin. Well equipped, 270-bed, modern hospital with separate surgical facilities for ophthalmology and otolaryngology. Candidate must be certified or eligible for certification. Write to Marshfield Clinic, Marshfield, Wisconsin.

An opening exists for a full-time faculty member in ophthalmology in the University of Miami School of Medicine, Miami, Florida. The position offered is that of instructor, which is at the lowest level in the academic salary schedule. It is intended to be permanent, subject to the usual annual reviews, with unlimited potentialities for the future. Applicants should be predominantly interested in research and teaching, preferably with some background indicating this interest, although individuals only recently having completed their residency training, who are sure of their permanent interest and who definitely plan a career in the academic side of ophthalmology, will be considered. The right to a limited amount of private practice is included if an individual has or obtains a Florida license. Write to Chief, Division of Ophthalmology, Department of Surgery, University of Miami School of Medicine, Jackson Memorial Hospital, Miami 36, Florida.

Ophthalmologist wanted to associate with part-time university faculty member in partially built-up practice. Immediate opportunity. Florida license required. Board certified or eligible. Percentage immediately, leading to partnership or purchase. University appointment available. Contact John F. McKenna, M.D., 6915 Red Road, South Miami 43, Florida.

Listings of positions available should be sent to W. L. Benedict, M.D., 100 First Avenue Building, Rochester, Minn., by the fifth of the month preceding publication. They should include (1) type of physician wanted (ophthalmologist or otolaryngologist; diplomate, resident, etc.); (2) type of position to be filled; and (3) whom to write for further information. Unless otherwise requested, listings will be published once only.

CHANGE OF ADDRESS

PLEASE NOTIFY the office of the Secretary of the Academy of change of address. TRANSACTIONS mailing envelopes are addressed three weeks before mailing date. Your copy will reach you if we have your correct address. Please keep us up to date on your CITY, ZONE AND ROOM NUMBER OF YOUR OFFICE BUILDING. TRANSACTIONS and DIRECTORIES are returned to the publisher each month because we have not been informed of changes of address.

The DIRECTORY is compiled once a year, in March. Check your name and address now to see if it is correct. If not, please notify the editor at once. Send us word immediately of any future change.

DIRECTORY OF OPHTHALMOLOGIC AND OTOLARYNGOLOGIC SOCIETIES

Secretaries of societies are requested to furnish the information necessary to make this list complete and keep it up to date. Send to TRANSACTIONS, *American Academy of Ophthalmology and Otolaryngology, 100 First Avenue Bldg., Rochester, Minn.*

EXAMINING AND CERTIFYING BODIES

American Board of Ophthalmology

Chairman: Dr. Brittain F. Payne
Secretary: Dr. Merrill J. King, Box 236, Cape Cottage Branch, Portland 9, Maine
Practical Examination: June 23-27, 1957; New York
Written Examination: January 21, 1957

American Board of Otolaryngology

President: Dr. Gordon D. Hoople
Secretary: Dr. Dean M. Lierle, University Hospitals, Iowa City, Iowa
Oral Examination: October 7-11, 1957; Palmer House, Chicago

American Board of Plastic Surgery

Chairman: Dr. James T. Mills
Secretary-Treasurer: Dr. Bradford Cannon, 330 Dartmouth St., Boston 16
Corresponding Secretary: Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8

Brazilian Board of Ophthalmology

Chairmen: Prof. Moacyr E. Alvaro
Prof. Cyro de Rezende
General Secretaries: Dr. Rubens Belfort Mattos, Caixa Postal 4086, Sao Paulo, Brazil
Dr. Sylvio de Almeida Toledo, Braulio Gomes 25, Sao Paulo, Brazil

The Royal College of Physicians and Surgeons of Canada

President: Dr. Robert M. Janes
Honorary Secretary: Dr. James H. Graham, 150 Metcalfe St., Ottawa 4, Ont., Canada

INTERNATIONAL

Concilium Ophthalmologicum Universale (International Council of Ophthalmology)

President: Sir Stewart Duke-Elder
Secretary: Dr. Edward Hartmann, 2 Ave. Ingres, Paris (16e), France
Time and Place: The Council meets at the time and place of each International Congress (usually every 4 years) and other years alternately in France and Great Britain.

Eighteenth Ophthalmological International Congress

President: Dr. Léon Copez
General Secretary: Prof. Jules Francois, 15, place de Smet de Meyer, Gand, Belgium
Time and Place: September 8-12, 1958; Brussels, Belgium

International Association of Secretaries of Ophthalmological and Otolaryngological Societies

President: Dr. A. E. Cruthirds
Secretary: Dr. Edley H. Jones, 1301 Washington St., Vicksburg, Miss.
Time and Place: October 15, 1957; Palmer House, Chicago

International Association for the Prevention of Blindness

President: Prof. A. Franceschetti
Secretary: Dr. J. B. Bailliart, 47 Rue de Bellechasse, Paris VII, France
Time and Place: September 8-12, 1958; Brussels, Belgium

International Broncho-Esophagological Society

President: Dr. Theodor Hünermann
Secretary: Dr. Chevalier L. Jackson, 3401 N. Broad St., Philadelphia 40
Time and Place: May 12-13, 1957; Philadelphia

International Federation of Ophthalmological Societies

President: Sir Stewart Duke-Elder
Secretary: Prof. Dr. Edward Hartmann, 2 Ave. Ingres, Paris (16e), France
Time and Place: September 1958; Brussels, Belgium

International Organization Against Trachoma

President: Prof. G. B. Bietti
Secretary-General: Jean Sedan, 94 rue Sylvabelle, Marseilles, France
Time and Place: September 8-12, 1958; Brussels, Belgium

Pan-American Association of Ophthalmology

President: Dr. Brittain F. Payne
Secretaries: For North of Panama: Dr. J. Wesley McKinney, Exchange Bldg., Memphis, Tenn.
For South of Panama: Dr. Jorge Balza, Azcuénaga 1059, Buenos Aires, Argentina
Time and Place: *Fourth Interim Congress;* April 7-10, 1957; Hotel Statler, New York
Sixth Pan-American Congress of Ophthalmology; 1960, Caracas, Venezuela.

PAN-AMERICAN ASSOCIATION OF OTO-RHINO-LARYNGOLOGY AND BRONCHO-ESOPHAGOLOGY

President: Dr. José Gros
Secretary: Dr. Chevalier L. Jackson, 3401 N. Broad St., Philadelphia 40, Pa.
Time and Place: Sixth Pan-American Congress of Oto-Rhino-Laryngology and Broncho-Esophagology, Brazil, 1958

SIXTH INTERNATIONAL CONGRESS OF OTOLARYNGOLOGY

President: Dr. Arthur W. Proetz
Secretary: Dr. Paul H. Holinger, 700 North Michigan Ave., Chicago 11
Time and Place: May 5-10, 1957; Washington, D. C.

FOREIGN

Argentina

SOCIEDAD ARGENTINA DE OFTALMOLOGIA

President: Dr. Jorge Balza
Secretary: Dr. Edgardo Manzitti, Santa Fé 1171, Buenos Aires
Time and Place: Third Wednesday of every month; Buenos Aires

Australia

OPHTHALMOLOGICAL SOCIETY OF AUSTRALIA

President: Dr. Kevin T. O'Day
Secretary: Dr. Peter A. Rogers, 27 Commonwealth St., Sydney
Time and Place: October 1957; Melbourne, Victoria

Austria

OSTERREICHISCHE OTO-LARYNGOLOGISCHE GESELLSCHAFT
(AUSTRIAN OTOLARYNGOLOGICAL SOCIETY)

President: Prof. Dr. Emil Schlander
Secretary: Dr. Julius Popper, Schottenring 17, Vienna I.
Time and Place: First Tuesday of the month; Vienna General Hospital, Alserstrasse 4, Vienna IX.

OSTERREICHISCHEN OPHTHALMOLOGISCHEN GESELLSCHAFT

President: Prof. Dr. Karl Lindner
Secretary: Dr. Franz Schwab, 1, Universitäts Augënklinik, Spitalgasse, 2, Vienna 9

OPHTHALMOLOGISCHE GESELLSCHAFT IN WIEN

President: Prof. Dr. Josef Böck
Secretary: Dr. Rudolf Gittler, Alserstrasse 4, 1. Univ. Augenklinik, Vienna 9
Time and Place: Second Monday of each month, 7 p.m.; Auditorium, 2 Universitäts-Augenklinik, Alserstrasse 4

Belgium

SOCIETE BELGE D'OPHTALMOLOGIE

Secretary-General: Dr. M. Appelmans, 179 ave. Reulens, Louvain

Brazil

SOCIEDADE BRASILEIRA DE OFTALMOLOGIA

President: Dr. Orlando Rebello
Secretaries: Dr. Renato Pereira Machado, Dr. Carlos Henrique Bessa, Dr. Aderbal de Albuquerque Alves

CENTRO DE ESTUDOS DE OFTALMOLOGIA

President: Dr. Rubens Belfort Mattos
Secretary: Dr. Renato de Toledo, Rua Condessa Sao Joaquim 288, Sao Paulo
Time and Place: Every Tuesday; Rua Condessa Sao Joaquim 288, Sao Paulo

SOCIEDADE DE OFTALMOLOGIA DE SAO PAULO

President: Dr. Paulo Braga Magalhaes
General Secretary: Dr. Paulo Aranha de Azevedo, Xavier de Toledo 71, 1° andar., Sao Paulo

SOCIEDADE DE OFTALMOLOGIA E OTORRINOLARINGOLOGIA
DO RIO GRANDE DO SUL

President: Dr. Paulo Fernando Esteves
Secretary: Dr. Carlos Buede, Rua Uraguay N. 240, Ed. Piratini 10° andar, Porto Alegre, Rio Grande do Sul

Canada

CANADIAN MEDICAL ASSOCIATION, SECTION ON OPHTHALMOLOGY

Chairman: Dr. Edward F. Foy
Secretary: Dr. Robert W. Robertson, 305 Northgate Bldg., Edmonton, Alta.
Time and Place: June 17-21, 1957; The McDonald, Edmonton

CANADIAN OPHTHALMOLOGICAL SOCIETY

President: Dr. John McLean
Secretary: Dr. R. G. C. Kelly, 90 St. Clair Ave. West, Toronto 7, Ont.

CANADIAN OTOLARYNGOLOGICAL SOCIETY

President: Dr. G. M. T. Hazen
Secretary: Dr. G. Arnold Henry, Suite 328, Medical Arts Bldg., Toronto, Ont.
Time and Place: June 17-19, 1957; Banff Springs Hotel, Quebec City, Que.

MONTREAL OPHTHALMOLOGICAL SOCIETY

President: Dr. Roland Viger
Secretary: Dr. G. Cousineau, 300 St. Louis Square
Places: Royal Victoria Hospital, Notre Dame Hospital, Montreal General Hospital, and Hotel Dieu Hospital

NOVA SCOTIA SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. H. R. McKean
Secretary: Dr. C. F. Keays, 324 Spring Garden Rd., Halifax
Time and Place: November 1957; Halifax

OPHTHALMOLOGICAL AND OTOLARYNGOLOGICAL SOCIETY OF ALBERTA

President: Dr. E. F. Foy
Secretary: Dr. M. R. Marshall, North Pavilion, University Hospital, Edmonton, Alta.
Time and Place: Spring 1957; Edmonton, Alta.

TORONTO ACADEMY OF MEDICINE, SECTION OF OPHTHALMOLOGY

Chairman: Dr. George A. Thompson
Secretary: Dr. J. Lloyd Burns, 1421 Danforth Ave., Toronto, Ont.

Chile

SOCIEDAD CHILENA DE OFTALMOLOGIA

President: Dr. Abraham S. Schweitzer
Secretary: Dr. Raul E. Valenzuela, Casilla 13017, Providencia, Santiago
Time and Place: 7:00 p.m., last Friday of each month; Ave. Salvador No. 300, Santiago

Colombia

SOCIEDAD COLOMBIANA DE OFTALMOLOGIA Y OTORRINOLARINGOLOGIA

President: Dr. Francisco Vernaza
Secretary: Dr. Félix E. Lozano Diaz, Apartado Aéreo 5601, Bogota, D.E.

Cuba

SOCIEDAD CUBANA DE OFTALMOLOGIA

President: Dr. Rafael Labrador Fuiz
Secretary: Dr. Guillermo De La Torre, Calle G. No. 506, Vedado, Havana
Time and Place: First Thursday bi-monthly; Malecon 61, Bajos, Havana

Denmark

OPHTHALMOLOGICAL SOCIETY IN COPENHAGEN, DENMARK

President: Dr. Børge Lawatz
Secretary: Dr. Jens Edmund, University Eye Clinic, Copenhagen

Egypt

OPHTHALMOLOGICAL SOCIETY OF EGYPT

President: Dr. Fattouh Mohammad Fattouh
Honorary Secretary: Dr. Sabri Kamel, Dar El Hekmah, 42 Kasr El Ainy St., Cairo
Time and Place: March 1957, Memorial Institution for Ophthalmic Research, Giza

France

SOCIETE FRANCAISE D'OPHTALMOLOGIE

President: M.le Prof. Guy Offret
Secretary: M. le Dr. Gabriel Lombard, Hospital Cochin, Pavillon Sicard, 27 rue du Fg St. Jacques, Paris
Place: Maison de la Chimie, 28 bis, rue Saint Dominique, Paris

Germany

GERMAN OPHTHALMOLOGICAL SOCIETY
(UNITED CONGRESS)

President: Prof. Dr. Rudolf Thiehl
Secretary: Prof. Dr. E. Engelking, Universitats-Augenklinik, Heidelberg
Time and Place: 8:00 p.m., December 9, 1957; Heidelberg

DEUTSCHE OPHTHALMOLOGISCHE GESELLSCHAFT HEIDELBERG

President: Prof. Dr. Rudolf Thiehl
Secretary: Prof. Dr. E. Engelking, Kapellenneg 22, Heidelberg
Time and Place: Usually in September of each year; Heidelberg

Great Britain

BRITISH ASSOCIATION OF OTOLARYNGOLOGISTS

President: Mr. I. Simson Hall, F.R.C.P.E., F.R.C.S.E.
Secretary: Mr. Myles L. Formby, T.D., F.R.C.S., 45 Lincoln's Inn Fields, London W.C. 2.

FACULTY OF OPHTHALMOLOGISTS

President: Dr. John Marshall
Secretary: Mr. E. F. King, F.R.C.S., 45 Lincoln's Inn Fields, London W.C. 2.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM

President: J. J. Healy, M.B., Ch.B.
Secretaries: C. A. Cook, M.C., G.M., F.R.C.S.; J. R. Hudson, F.R.C.S., 45 Lincoln's Inn Fields, London, W.C. 2

ROYAL SOCIETY OF MEDICINE, SECTION OF OPHTHALMOLOGY

President: R. C. Davenport, F.R.C.S.
Honorary Secretaries: E. S. Perkins, F.R.C.S., and D. P. Greaves, F.R.C.S., 1 Wimpole St., London, W.1.
Time and Place: 4:30 p.m., second Thursday of month from October to June; 1 Wimpole St., London, W.1.

MIDLAND OPHTHALMOLOGICAL SOCIETY

President: Mr. P. Jameson Evans
Secretaries: Mr. M. J. Roper-Hall and Mr. W. Martin Walker, Birmingham and Midland Eye Hospital, Church St., Birmingham 3
Time and Place: October to June, Tuesday, Thursday, Friday or Saturday according to programme director; Birmingham and Midland Eye Hospital

OXFORD OPHTHALMOLOGICAL CONGRESS

President: J. W. Tudor-Thomas, F.R.C.S.
Honorary Secretary and Treasurer: Ian C. Fraser, F.R.C.S., 21 Dogpole, Shrewsbury, Shropshire
Time and Place: July 1-3, 1957; Lecture Hall, School of Physiology, Oxford

SCOTTISH OPHTHALMOLOGICAL CLUB

President: Dr. John Marshall
Secretary: Dr. John D. Fraser, 31 Kingsborough Gardens, Glasgow, Scotland

SOUTHERN OPHTHALMOLOGICAL SOCIETY OF ENGLAND

President: F. Oliver Walker, M.R.C.S., L.R.C.P., D.P.M. (Oxon.)
Secretary: Nigel Cridland, D.M., D.O., (Oxon.)., 25 Craneswater Park, Southsea, Hants.

India

ALL-INDIA OPHTHALMOLOGICAL SOCIETY

President: Capt. K. Sen
Secretaries: Dr. S. N. Cooper and Dr. Y. K. C. Pandit, Laud Mansion 21, Queen's Rd., Bombay 4.

BOMBAY OPHTHALMOLOGIST'S ASSOCIATION

President: Dr. V. K. Chitnis, D.O. (Ox.), D.O. (Bom.)
Honorary Secretaries: Dr. C. B. Dhurandhar, D.O. (Bom.) and Dr. B. B. Velanker, D.O. (Bom.), 112 Habib Bldg., Girgaum, Bombay
Time and Place: Third Wednesday every month at various hospitals in Bombay

OPHTHALMOLOGICAL SOCIETY OF BENGAL

President: Capt. K. L. Sen
Secretaries: Dr. S. Bagchi and Dr. M. Sengupta, 94 Chittaranjan Ave., Calcutta 12

Ireland

IRISH OPHTHALMOLOGICAL SOCIETY

President: Dr. Frank Lavery
Secretary: Dr. L. B. Somerville-Large, 2 Fitzwilliam Place, Dublin
Time and Place: May 16-18, 1957; Dublin

The Netherlands

NEDERLANDSCH OOGHEELKUNDIG GEZELSCHAP

President: Prof. Dr. A. Hagedoorn
Secretary: Dr. P. G. Binkhorst, Sweelincklaan 20, Bilthoven

New Zealand

OPHTHALMOLOGICAL SOCIETY OF NEW ZEALAND

President: Dr. J. Monro
Secretary: Dr. C. C. Ring, 1A Alfred St., Auckland

Norway

NORSKE OYELEGERS FORENING
(SOCIETY OF NORWEGIAN OPHTHALMOLOGISTS)

President: Dr. Ludvig Wirsching
Secretary: Dr. med. H. P. Petersen, Rikshospitalet (Oyenavdelingen) Oslo

Paraguay

SOCIETY OF OPHTHALMOLOGY OF PARAGUAY
(PARAGUAYAN OPHTHALMOLOGICAL SOCIETY)

President: Dr. Armindo Riquelme
Secretary: Dr. Honorio Campuzano, Coronel Bogado 492, Asuncion
Time and Place: Monthly at the Circulo Paraguay de Médicos

Portugal

SOCIEDADE PORTUGUSEA DE OTORRINOLARINGOLOGIA E DE BRONCHO-ESOFAGOLOGIA

President: Dr. Alberto Luis de Mendonca
Secretaries: Dr. Antonio da Costa Quinta and Dr. Albano Coelho, Avenida da Liberdade, 65, Lisbon 1

Union of South Africa

OPHTHALMOLOGICAL SOCIETY OF SOUTH AFRICA

President: Dr. R. L. H. Townsend
Secretary: Dr. J. Guilliaume Louw, 17 Church Square, Cape Town
Place: Capetown

Spain

SOCIEDAD OFTALMOLOGICA HISPANO-AMERICANA

President: Dr. Manuel Lopez Enriquez
Secretary: Dr. Carlos Costi Garcia de Tunon, Montalban, 7, Madrid

Sweden

SVENSKA OGONLAKAREFORENINGEN, SVENSKA LAKARESALLSKAPETS SEKTION FOR OFTALMOLOGI

President: Prof. G. v. Bahr
Secretary: Dr. K. O. Granstrom, Sodermalmstorg 4, Stockholm So.
Time and Place: 1957; Stockholm

NATIONAL

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. Erling W. Hansen
Executive Secretary-Treasurer: Dr. William L. Benedict, 100 First Avenue Bldg., Rochester, Minn.
Time and Place: October 13-18, 1957; Palmer House, Chicago

AMERICAN BRONCHO-ESOPHAGOLOGICAL ASSOCIATION

President: Dr. Clarence W. Engler
Secretary: Dr. F. Johnson Putney, 1719 Rittenhouse Sq., Philadelphia 3
Time and Place: Afternoons only, May 21-23, 1958; Mark Hopkins Hotel, San Francisco

AMERICAN LARYNGOLOGICAL ASSOCIATION

President: Dr. LeRoy A. Schall
Secretary: Dr. Harry P. Schenck, 326 S. 19th St., Philadelphia 3
Time and Place: May 3, 1957; Statler Hotel, Washington, D. C.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, INC.

President: Dr. Percy E. Ireland
Secretary: Dr. C. Stewart Nash, 708 Medical Arts Bldg., Rochester 7, N. Y.

Eastern Section

Chairman: Dr. Joseph A. Sullivan
Secretary: Dr. F. Johnson Putney, 1719 Rittenhouse Sq., Philadelphia 3
Time and Place: January 30, 1957; Toronto, Ont., Canada

Middle Section

Vice-President: Dr. William H. Craddock
Secretary: Dr. Charles E. Kinney, 10515 Carnegie Ave., Cleveland 6

Southern Section

Vice-President: Dr. J. M. Robison
Secretary: Dr. James A. Harrill, Bowman Gray School of Medicine, Winston-Salem, N. C.

Western Section

Chairman: Dr. Sigurd Von Christierson
Secretary: Dr. Francis Sooy, 490 Post St., San Francisco
Time and Place: January 19-20, 1957; St. Francis Hotel, San Francisco

AMERICAN MEDICAL ASSOCIATION, SECTION ON OPHTHALMOLOGY

Chairman: Dr. Algernon B. Reese
Secretary: Dr. Harold G. Scheie, 313 South 17th St., Philadelphia 3
Time and Place: Annual meeting, June 3-7, 1957; New York

AMERICAN MEDICAL ASSOCIATION, SECTION ON OTOLARYNGOLOGY

Chairman: Dr. John R. Lindsay
Secretary: Dr. Hugh A. Kuhn, 112 Rimbach St., Hammond, Ind.
Time and Place: Annual meeting, June 3-7, 1957; New York

AMERICAN OPHTHALMOLOGICAL SOCIETY

President: Dr. Frederick C. Cordes
Secretary-Treasurer: Dr. Maynard C. Wheeler, 30 W. 59th St., New York 19

AMERICAN OTOLOGICAL SOCIETY, INC.

President: Dr. John R. Lindsay
Secretary: Dr. Lawrence R. Boies, University Hospital, Minneapolis 14
Time and Place: May 4, 1957; Statler Hotel, Washington, D. C.

AMERICAN OTORHINOLOGIC SOCIETY FOR PLASTIC SURGERY

President: Dr. Kenneth Hinderer
Secretary: Dr. Louis J. Feit, 66 Park Ave., New York 16
Time and Place: February 17-23, 1957; New Orleans

AMERICAN SOCIETY OF OPHTHALMOLOGIC AND OTOLARYNGOLOGIC ALLERGY

President: Dr. Sam H. Sanders
Secretary-Treasurer: Dr. Michael H. Barone, 468 Delaware Ave., Buffalo 2
Time and Place: October 17-18, 1957; Palmer House, Chicago

ASSOCIATION FOR RESEARCH IN OPHTHALMOLOGY, INC.

Chairman: Dr. William B. Clark
Secretary: Dr. Lorand V. Johnson, 10515 Carnegie Ave., Cleveland 6
Time and Place: June 3-7, 1957; Chicago

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS

President: Mr. Mason H. Bigelow
Executive Director: Dr. Franklin M. Foote, 1790 Broadway, New York 19
Time and Place: April 7-10, 1957 (Jointly with Fourth Interim Congress of the Pan-American Association of Ophthalmology); New York

PUERTO RICO MEDICAL ASSOCIATION, SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. Roberto Buxeda
Secretary: Dr. Guillermo Pico, 654 Ponce de Leon Ave., Santurce
Time and Place: Every other month; Puerto Rico Medical Association Bldg., Santurce

PUERTO RICO OPHTHALMOLOGICAL SOCIETY

President: Dr. Roberto Buxeda
Secretary-Treasurer: Dr. Guillermo Pico, 654 Ponce de Leon Ave., Santurce
Time and Place: Every other month; Puerto Rico Medical Association Bldg., Santurce

SOCIETY OF MILITARY OPHTHALMOLOGISTS

President: Brig. Gen. Victor Byrnes
Secretary: Capt. James A. Stokes, M.C., Walter Reed Army Hospital, Washington 12, D. C.

SOCIETY OF MILITARY OTOLARYNGOLOGISTS

President: Col. Wendell A. Weller
Secretary-Treasurer: Major Stanley H. Bear, M.C., 3810th U.S.A.F. Hospital, Maxwell A.F.B., Alabama

REGIONAL

ARK-LA-TEX OTO-OPHTHALMIC SOCIETY

President: Dr. J. L. Custer
Secretary: Dr. W. W. Hart, Medical Arts Bldg., Shreveport, La.
Time and Place: First Monday of month, except January, June, July, September; Confederate Memorial Hospital

HAWAII EYE, EAR, NOSE AND THROAT SOCIETY

President: Dr. T. W. Cowan
Secretary: Dr. Robert H. Lee, 1443 Nuuanu Ave., Honolulu 17
Time and Place: 6:30 p.m. (dinner meetings), third Thursday of each month, October-June; Pacific Club, Honolulu

INTER-MOUNTAIN OTO-OPHTHALMOLOGICAL SOCIETY

President: Dr. Alan S. Crandall
Secretary: Dr. Whitney J. Haight, Boston Bldg., 9 Exchange Pl., Salt Lake City 1, Utah
Time and Place: Third Monday, September-May; Salt Lake City

LOUISIANA-MISSISSIPPI OPHTHALMOLOGICAL AND OTOLARYNGOLOGICAL SOCIETY

President: Dr. H. K. Rouse
Secretary-Treasurer: Dr. Edley H. Jones, 1301 Washington St., Vicksburg, Miss.
Time and Place: May 17-18, 1957; Edgewater Gulf Hotel, Edgewater Park, Miss.

NEW ENGLAND OPHTHALMOLOGICAL SOCIETY

President: Dr. Merrill J. King
Secretary: Dr. Karl Riemer, 403 Commonwealth Ave., Boston
Time and Place: Third Wednesday, November through April; Massachusetts Eye and Ear Infirmary, 243 Charles St., Boston

NEW ENGLAND OTOLARYNGOLOGICAL SOCIETY

President: Dr. Burton E. Lovesey
Secretary: Dr. Burton E. Lovesey, 15 West Central St., Natick, Mass.
Time and Place: Three times a year; Massachusetts Eye and Ear Infirmary, 243 Charles St., Boston

PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY

President: Dr. H. Leroy Goss
Secretary: Dr. Homer E. Smith, 508 E. South Temple, Salt Lake City, Utah
Time and Place: April 7-11, 1957; Coronado, Calif.

SIOUX VALLEY ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. F. A. Finnegan
Secretary: Dr. Sidney F. Becker, B-1600 S. Western Ave., Sioux Falls, S. D.
Time and Place: February 1957; Sioux City, Iowa

SOUTHERN MEDICAL ASSOCIATION, SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

Chairman: Dr. Sherman B. Forbes
Secretary: Dr. G. Slaughter Fitz-Hugh, 104 E. Market St., Charlottesville, Va.
Time and Place: November 11-13, 1957; Miami, Fla.

WISCONSIN-UPPER MICHIGAN SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. Donald H. Boyce
Secretary: Dr. G. L. McCormick, 650 S. Central Ave., Marshfield, Wis.
Time and Place: April 1957; Mayo Clinic, Rochester, Minnesota

STATE AND LOCAL

Alabama

ALABAMA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. John K. Lingo
Secretary: Dr. Eugene Callaway, Jr., Selma
Time and Place: January 17, 1957; Point Clear

Arkansas

ARKANSAS MEDICAL SOCIETY, EYE, EAR, NOSE AND THROAT SECTION

President: Dr. W. J. Schwartz
Secretary: Dr. James L. Smith, 623 Woodlane, Little Rock

California

California Medical Association, Ear, Nose and Throat Section

President: Dr. Channing W. Hale
Secretary: Dr. Harold Alexander, 14 W. Valerie, Santa Barbara
Time and Place: May 1957; Los Angeles

Alta California Ophthalmological Society

President: Dr. John A. Berg
Secretary: Dr. Robert L. Alexander, 1127 Eleventh St., Sacramento
Time and Place: Third Thursday of every month except July and August; Sutter Club, Sacramento

East Bay Ophthalmological Society

President: Dr. Dudley Bell
Secretary: Dr. Arthur F. Steinmetz, 1237 B St., Hayward
Time and Place: Every three months, different locations

Los Angeles Ophthalmological Journal Club

President: Dr. Sol Ludmerer
Secretary: Dr. Sol Ludmerer, 3736 Atlantic Ave., Long Beach 7
Time and Place: Third Monday of each month, September through June; Los Angeles County Medical Association

Los Angeles Society of Ophthalmology and Otolaryngology

President: Dr. Leland R. House
Secretary: Dr. Sol Rome, 1917 Wilshire Blvd., Los Angeles 5
Time and Place: 6:00 p.m., fourth Monday, September-June, Otolaryngology; 6:00 p.m., first Thursday, September-June, Ophthalmology; Los Angeles County Medical Assn. Bldg., 1925 Wilshire Blvd.

San Diego Ophthalmological Society

President: Dr. H. R. Merrill
Secretary: Dr. A. B. Root, 3315 Fourth Ave., San Diego 3
Time and Place: 6:30 p.m., second Monday of each month; University Club

San Francisco Medical Society, Eye Section

Chairman and Secretary: Dr. Harold O. Parkinson, 760 Market St., San Francisco
Time and Place: 9:15 p.m., first Tuesday in April and second Tuesday in September; 8:15 p.m., first Tuesday in December; San Francisco Medical Society Bldg., 250 Masonic Ave.

San Francisco Ophthalmological Round Table

President: Dr. George S. Campion
Secretary: Dr. Albert J. Brinckerhoff, 490 Post St., San Francisco
Time: Three times a year

Colorado

Colorado Ophthalmological Society

President: Dr. Thomas Van Bergen
Secretary: Dr. James C. Strong, Jr., 227 Sixteenth St., Denver
Time and Place: Third Saturday of each month, September through May; University of Colorado Medical Center, Denver

Colorado Otolaryngological Society

President: Dr. Donald F. Page
Secretary: Dr. Sidney H. Fieman, 730 Republic Bldg., Denver 2
Time and Place: 8:00 p.m., first Saturday of each month; Colorado General Hospital

Connecticut

Connecticut State Medical Society, Eye, Ear, Nose and Throat Section

Chairman: Dr. Max Alpert
Secretary: Dr. Frederick Wies, 225 Bradley St., New Haven
Time and Place: In conjunction with the Connecticut State Medical Society

Florida

Florida Society of Ophthalmology and Otolaryngology

President: Dr. Charles W. Boyd
Secretary: Dr. Kenneth S. Whitmer, 550 Brickell Ave., Miami

Greater Miami Eye, Ear, Nose and Throat Society

President: Dr. A. Hollender
Secretary: Dr. James H. Mendel, Jr., 7241 Red Road, Miami
Time and Place: February, May, October and December; Seven Seas Restaurant

Georgia

Georgia Society of Ophthalmology and Otolaryngology

President: Dr. W. M. Barton
Secretary: Dr. Walter P. Rhyne, Box 206, Albany
Time and Place: April 1957; General Oglethorpe Hotel, Wilmington Island, Savannah. Cruise from Charleston, S. C., to Nassau, The Bahamas.

Atlanta Eye, Ear, Nose and Throat Society

President: Dr. William T. Edwards
Secretary: Dr. Jack Stokes, 512 Medical Arts Bldg., 384 Peachtree St., N.E., Atlanta
Time and Place: Fourth Monday of each month; Fulton County Academy of Medicine, Atlanta

Illinois

CENTRAL ILLINOIS SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. Edward C. Albers
Secretary: Dr. Clarence A. Fleischli, 520 E. Allen St., Springfield
Time and Place: April 4-6, 1957; Champaign

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

President: Dr. Raymond W. Kerwin
Secretary: Dr. Stanton A. Friedberg, 122 S. Michigan Ave., Chicago 3
Time and Place: First Monday of each month at various places

CHICAGO OPHTHALMOLOGICAL SOCIETY

President: Dr. Kenneth L. Roper
Secretary: Dr. Joseph S. Haas, 109 N. Wabash Ave., Chicago 2
Time and Place: 7:30 p.m., third Monday of each month, October to May; Chicago-Illini Union, 715 S. Wood St.

Indiana

INDIANA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. C. P. Clark
Secretary: Dr. John J. Flick, 1443 N. Pennsylvania St., Indianapolis
Time: Annually in May

INDIANAPOLIS OPHTHALMOLOGICAL AND OTOLARYNGOLOGICAL SOCIETY

President: Dr. John J. Flick
Secretary: Dr. M. Richard Harding, 23 E. Ohio St., Indianapolis 4
Time and Place: 6:30 p.m., second Tuesday of each winter month; Indianapolis Athletic Club

Iowa

IOWA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. William C. Huffman
Secretary: Dr. Arthur C. Wise, 212 Savings and Loan Bldg., Iowa City

DES MOINES ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. Robert P. Updegraff
Secretary: Dr. C. C. Walker, 304 Bankers Trust Bldg., Des Moines
Place: Des Moines Club

Kansas

KANSAS STATE MEDICAL SOCIETY, SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. Larry L. Calkins
Secretary: Dr. Victor R. Moorman, Hutchinson
Time and Place: May 1957; Wichita

Kentucky

LOUISVILLE EYE AND EAR SOCIETY

President: Dr. Charles L. Bloch
Secretary: Dr. George I. Uhde, 610-613 Brown Bldg., Louisville 2

Maryland

BALTIMORE CITY MEDICAL SOCIETY, OPHTHALMOLOGICAL SECTION

President: Dr. Charles E. Iliff
Secretary: Dr. William Marr, 10 E. Chase St., Baltimore 2
Place: Johns Hopkins Club, Johns Hopkins Campus

BALTIMORE EAR, NOSE AND THROAT SOCIETY

President: Dr. Theodore A. Schwartz
Secretary: Dr. Alvin P. Wenger, 1100 N. Charles St., Baltimore
Time and Place: Second Tuesday of each month; Johns Hopkins Club, Homewood

Massachusetts

MASSACHUSETTS MEDICAL SOCIETY, SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

Chairman: Dr. Lawrence R. Dame
Secretary: Dr. John E. McKeigue, 94 Pleasant St., Arlington
Time and Place: May 24, 1957; Boston

BOSTON CITY HOSPITAL AURAL AND OPHTHALMIC SOCIETY

President: Dr. Albert E. Sloane
Secretary: Dr. Thomas P. White, 520 Commonwealth Ave., Boston

Michigan

MICHIGAN STATE MEDICAL SOCIETY, SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY

Chairman: Dr. Bernard C. Wildgren (Ophthalmology)
Co-chairman: Dr. Walter K. Locklin (Otolaryngology)
Secretary: Dr. Henry A. Dunlap, 7815 E. Jefferson, Detroit 14 (Ophthalmology)
Co-secretary: Dr. Harry LeVett, 117½ W. Shiawassee, Lansing (Otolaryngology)
Time and Place: September 25-27, 1957; Grand Rapids

MICHIGAN TRIOLOGICAL SOCIETY

President: Dr. Harry L. LeVett
Secretary: Dr. Justin L. Sleight, 3001 Westchester Rd., Lansing
Time and Place: Quarterly; at various places in Michigan

DETROIT OPHTHALMOLOGICAL CLUB

Secretary: Dr. John W. Henderson, Room 6155, Out Patient Bldg., University Hospital, Ann Arbor
Time and Place: Second Monday of November, December, February and March; Wayne County Medical Society

DETROIT OPHTHALMOLOGICAL SOCIETY

President: Dr. Harold F. Falls
Secretary: Dr. James Olson, 1005 Mutual Bldg., 28 W. Adams, Detroit
Time and Place: 8:00 p.m., fourth Thursday of each month; The Harmonie Club, 267 E. Grand River

DETROIT OTOLARYNGOLOGICAL SOCIETY

President: Dr. Lyle G. Waggoner
Secretary: Dr. James E. Coyle, 573 Fisher Bldg., Detroit 2
Time and Place: Third Wednesday of each month; Wayne County Medical Society Headquarters

SAGINAW VALLEY ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. Hugh K. Cook
Secretary: Dr. Arno W. Weiss, 308 Eddy Bldg., Saginaw
Time and Place: First Tuesday of each month; Bancroft Hotel, Saginaw

Minnesota

MINNESOTA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. Karl E. Sandt
Secretary: Dr. Malcolm A. McCannel, 325 Doctors Bldg., Minneapolis
Time and Place: Second Friday of each month; alternating in Minneapolis and St. Paul

Missouri

KANSAS CITY SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. B. C. Trowbridge
Secretary: Dr. Dick H. Underwood, 1109 Bryant Bldg., Kansas City 6
Time and Place: Third Thursday of each month, November through May; Kansas City

EAR, NOSE AND THROAT CLUB OF ST. LOUIS

Chairman: Dr. L. W. Dean, Jr.
Secretary: Dr. Harry N. Glick, 1504 South Grand Blvd., St. Louis 4
Time and Place: Third Wednesday in November, January, March and May; University Club

ST. LOUIS OPHTHALMOLOGICAL SOCIETY

President: Dr. S. Albert Hanser
Secretary: Dr. Philip T. Shahan, 100 N. Euclid Ave., St. Louis 8
Time and Place: 5:30 p.m., January 24, February 28, March 28, and April 18, 1957; Park Plaza Hotel, 220 N. Kingshighway

Montana

MONTANA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. George G. Sale
Secretary: Dr. James D. Morrison, P. O. Box 1856, Billings
Time and Place: February 23-24, 1957; Diamond-S Ranchotel, Boulder

Nebraska

NEBRASKA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. T. T. Smith
Secretary-Treasurer: Dr. Paul L. Peterson, 702 Sharp Bldg., Lincoln
Time: May 1957

OMAHA EYE, EAR, NOSE AND THROAT SOCIETY

President: Dr. H. J. Herbert
Secretary: Dr. John C. Filkins, 419 City National Bank, Omaha 2
Time and Place: 6:30 p.m.; The Omaha Club

New Jersey

ACADEMY OF MEDICINE OF NEW JERSEY, SECTION ON EYE, EAR, NOSE AND THROAT

President: Dr. Thomas F. McAveny
Secretary: Dr. Francis Christoph, 811 Chestnut St., Union
Time and Place: 8:45 p.m., second Monday, October through May; Academy of Medicine, 91 Lincoln Park South, Newark

MEDICAL SOCIETY OF NEW JERSEY, SECTION ON OPHTHALMOLOGY

President: Dr. John Scillieri
Secretary: Dr. Samuel M. Diskan, 1616 Pacific Ave., Atlantic City
Time and Place: April 27-May 1, 1957; Atlantic City

NEW JERSEY OPHTHALMOLOGICAL SOCIETY

President: Dr. Charles Jaeckle
Secretary: Dr. Alfonse Cinotti, 3285 Hudson Blvd., Jersey City
Time and Place: May 1957; Atlantic City

NEW JERSEY ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. J. Wallace Hurff
Secretary: Dr. John Scillieri, 660 Broadway, Paterson 4

HUDSON COUNTY EYE, EAR, NOSE AND THROAT SOCIETY

President: Dr. A. A. Cinotti
Secretary: Dr. N. J. Shapiro, 1201 Palisade Ave., Union City
Time and Place: 9:00 p.m., third Monday, November to June; Pete Dominicks Restaurant, Jersey City

New Mexico

NEW MEXICO OPHTHALMOLOGICAL SOCIETY

President: Dr. Albert W. Egenhofer
Secretary: Dr. J. A. Dillahunt, 106 Girard Blvd. S.E., Albuquerque
Time and Place: May 9, 1957; Santa Fe

New York

NEW YORK ACADEMY OF MEDICINE, SECTION ON OPHTHALMOLOGY

President: Dr. Isadore Givner
Secretary: Dr. Byron Smith, 722 Park Ave., New York 21
Time and Place: 8:15 p.m., third Monday of each month; New York Academy of Medicine, 2 E. 103rd St.

NEW YORK ACADEMY OF MEDICINE, SECTION ON OTOLARYNGOLOGY

Chairman: Dr. Ernest A. Weymuller
Secretary: Dr. Richard J. Bellucci, 162 E. 71st St., New York 21
Time: Third Wednesday of each month

NEW YORK SOCIETY FOR CLINICAL OPHTHALMOLOGY

President: Dr. Max Chamlin
Secretary: Dr. Leon H. Ehrlich, 211 Central Park West, New York 24
Time and Place: 8:00 p.m., first Monday of the month; New York Academy of Medicine, 2 E. 103rd St.

CENTRAL NEW YORK EYE, EAR, NOSE AND THROAT SOCIETY

President: Dr. Lee Stoner
Secretary: Dr. George A. Sisson, 713 East Genesee St., Syracuse
Time and Place: February, May, August and November; The University Club, Syracuse

EASTERN NEW YORK EYE, EAR, NOSE AND THROAT SOCIETY

President: Dr. Benjamin M. Volk
Secretary: Dr. Frank C. Furlong, 713 Union St., Schenectady
Time and Place: 7:00 p.m., first Thursday of each month; alternating at Albany, Troy and Schenectady

ALUMNI ASSOCIATION OF THE NEW YORK EYE AND EAR INFIRMARY

President: Dr. William Hiram Evans
Secretary: Dr. Alfonse Cinotti, 3285 Hudson Blvd., Jersey City, N. J.
Place: New York Eye and Ear Infirmary, 218-2nd Ave., New York 3

BROOKLYN OPHTHALMOLOGICAL SOCIETY

President: Dr. B. M. Volk
Secretary: Dr. Frank C. Furlong, 713 Union St., Schenectady
Time and Place: Third Thursday in October, December, February and April; Kings County Medical Society, 1313 Bedford Ave.

BUFFALO OPHTHALMOLOGICAL CLUB

President: Dr. Elizabeth P. Olmsted
Secretary: Dr. Harold E. Wass, 840 West Delavan Ave., Buffalo 9

NASSAU OPHTHALMOLOGICAL SOCIETY

President: Dr. Conrad Berens
Secretary: Dr. Arthur E. Merz, 520 Franklin Ave., Garden City, L. I.
Time and Place: Fourth Monday, February, April, September and November; at various places

North Carolina

NORTH CAROLINA EYE, EAR, NOSE AND THROAT SOCIETY

President: Dr. E. J. Chapman
Secretary: Dr. James D. Stratton, 1012 Kings Dr., Charlotte 7
Time: Second week in September 1957

Ohio

AKRON ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. F. A. Johnson
Secretary: Dr. John J. Scuderi, 143 Portage Trail, Cuyahoga Falls
Time and Place: 6:30 p.m., first Monday of every other month; Akron City Club

CINCINNATI OPHTHALMOLOGIC CLUB

Executive Committee: Dr. Donald J. Lyle, Dr. Charles K. W. Ascher, Dr. Barnet R. Sakler
Secretary: Dr. Josef D. Weintraub, 715 Provident Bank Bldg., Cincinnati 2
Time: Second Wednesday, November through May

CINCINNATI OTOLARYNGOLOGICAL SOCIETY

President: Dr. Harry H. Haggart
Secretary: Dr. Joseph A. Lane, 614 Doctors Bldg., Cincinnati
Time and Place: Fourth Monday of each month; University Club

CLEVELAND OPHTHALMOLOGICAL CLUB

President: Dr. Donald G. Allen
Secretary: Dr. Elmer F. Harvey, Hanna Bldg., Cleveland 15
Time and Place: Second Tuesday of November, January, February and April; Wade Park Manor

CLEVELAND OTOLARYNGOLOGICAL CLUB

President: Dr. Fred W. Alexander
Secretary: Dr. Harold E. Harris, Cleveland Clinic, East 93rd St.
Time and Place: Quarterly; Wade Park Manor

COLUMBUS SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. T. A. Mackley, Jr.
Secretary: Dr. Carl W. Roth, 22 Buttles Ave., Columbus 8
Time and Place: 6:00 p.m., first Monday, October through May; University Club

TOLEDO EYE, EAR, NOSE AND THROAT SOCIETY

President: Dr. Henry P. Drake
Secretary: Dr. A. James Blanchard, 723 Phillips Ave.
Time and Place: 6:30 p.m., third Tuesday of each month; Toledo Club

Oklahoma

OKLAHOMA CITY ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. Robert I. Trent
Secretary: Dr. Jack Hough, 301 N.W. 12th, Oklahoma City 12
Time: Second Tuesday of each month, September through May

Oregon

OREGON ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. Ralph N. Westfall
Secretary: Dr. Charles W. Browning, 919 Taylor St., Portland 5
Place: Henry Thiele Restaurant, 23 and West Burnside, Portland

Pennsylvania

PENNSYLVANIA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. Chevalier L. Jackson
Secretary: Dr. Daniel S. De Stio, 121 S. Highland Ave., Pittsburgh 6
Time and Place: May 24-26, 1957; Bedford Springs Hotel, Bedford

WESTERN PENNSYLVANIA EYE, EAR, NOSE AND THROAT SOCIETY

President: Dr. Daniel S. De Stio
Secretary: Dr. F. E. Murdock, 28½ W. Scribner Ave., DuBois
Time: Third Thursday, April through September

COLLEGE OF PHYSICIANS OF PHILADELPHIA, SECTION ON OPHTHALMOLOGY

President: Dr. Isaac S. Tassman
Secretary: Dr. William E. Krewson, III, 1930 Chestnut St., Philadelphia 3
Time and Place: Third Thursday of every month, October-April; College of Physicians Bldg., 19 So. 22nd St., Philadelphia 3

PHILADELPHIA COUNTY MEDICAL SOCIETY, EYE SECTION

Chairman: Dr. Wilfred E. Fry
Secretary: Dr. Thomas H. Cowan, 1930 Chestnut St., Philadelphia 3
Time and Place: First Thursday of each month, October through April; County Medical Society Bldg., 21st and Spruce Sts., Philadelphia

PHILADELPHIA LARYNGOLOGICAL SOCIETY

President: Dr. Chevalier L. Jackson
Secretary: Dr. Louis E. Silcox, Lankenau Medical Bldg., Philadelphia 31
Time: First Tuesday of month, November through May

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

President: Dr. C. William Weisser
Secretary: Dr. Gertrude W. Baldwin, First National Bank Bldg., Greensburg
Time and Place: 8:00 p.m., third Monday of month, September through May; Mellon Institute

PITTSBURGH OTOLOGICAL SOCIETY

President: Dr. Raymond E. Jordan
Secretary: Dr. John T. Dickinson, Mercy Hospital, Pittsburgh 19

READING EYE, EAR, NOSE AND THROAT SOCIETY

President: Dr. Samuel A. Phillips
Secretary: Dr. James H. Parker, Jr., 238 N. 5th St.
Time and Place: Third Wednesday of each month, September through May; Wyomissing Club

WILKES-BARRE OPHTHALMOLOGICAL SOCIETY

President: Dr. Vincent Gallizi
Secretary: Dr. Albert J. Abbott, 203 E. Green St., Nanticoke
Time and Place: Last Tuesday of each month; Luzerne County Medical Society Bldg.

South Carolina

SOUTH CAROLINA SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. James H. Gressette
Secretary: Dr. Roderick Macdonald, 330 East Main St., Rock Hill
Time: September 1957; (Jointly with North Carolina E.E.N.T. Society)

Tennessee

TENNESSEE STATE ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. Hurbert Duncan
Secretary: Dr. Thomas Bryan, 2105 Hayes St., Nashville
Time and Place: April 1957; Nashville

CHATTANOOGA AND HAMILTON COUNTY EYE, EAR, NOSE AND THROAT SOCIETY
Chairman and Secretary: Dr. I. L. Arnold, 702 Medical Arts Bldg., Chattanooga
Time and Place: 6:30 p.m., second Thursday of each month; Mountain City Club

KNOXVILLE SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY
President: Dr. Olin Ballou
Secretary: Dr. J. E. Campbell, Jr., 406 W. Church Ave.
Time and Place: 6:30 p.m., first Monday of each month, September through May; Hotel Farragut

MEMPHIS SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY
Chairman: Each member in alphabetical order
Secretary: Dr. Roland H. Myers, 1720 Exchange Bldg., Memphis 3
Time and Place: Second Tuesday of each month; Memphis Eye, Ear, Nose and Throat Hospital, 1060 Madison Ave.

NASHVILLE ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY
President: Dr. G. Allen Lawrence
Secretary-Treasurer: Dr. J. Ralph Rice, 426 Bennie Dillon Bldg.
Time and Place: 6:00 p.m., third Monday of each month; James Robertson Hotel

Texas

TEXAS SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY
President: Dr. Kelly Cox
Secretary: Dr. Gatlin Mitchell, 1604 Medical Arts Bldg., Fort Worth

DALLAS ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY
President: Dr. Ludwig A. Michael
Secretary-Treasurer: Dr. Edward A. Newell, 1511 N. Beckley, Dallas 8
Time and Place: First Tuesday of each month, October through June; Dallas

FORT WORTH EYE, EAR, NOSE AND THROAT SOCIETY
President: Dr. Walter P. Anthony
Secretary: Dr. William Hendrix, 1216 Pennsylvania Ave.
Time and Place: 6:00 p.m., first Friday of each month; St. Joseph Hospital

HOUSTON ACADEMY OF MEDICINE, OPHTHALMOLOGICAL AND OTOLARYNGOLOGICAL SECTIONS
President: Dr. Jacob F. Schultz
Secretary: Dr. Frederick R. Guilford, 509 Hermann Professional Bldg., Houston 25
Time and Place: Second Thursday of each month; The Doctors' Club

NUECES COUNTY EYE, EAR, NOSE AND THROAT SOCIETY
President: Dr. Thomas P. O'Brien
Secretary: Dr. Joseph A. Abbey, 2400 Morgan, Corpus Christi
Time: Bimonthly

SAN ANTONIO SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY
President: Dr. I. Newton Watson
Secretary: Dr. James L. Mims, 211 Medical Arts Bldg.
Time and Place: Third Tuesday of each month; San Antonio Country Club

Virginia

VIRGINIA SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY
President: Dr. Ben Sheppard
Secretary: Dr. Maynard P. Smith, 600 Professional Bldg., Richmond

RICHMOND, VIRGINIA, EYE, EAR, NOSE AND THROAT SOCIETY
President: Dr. Ed Bryce
Secretary: Dr. Charles N. Romaine, IV, 1001 West Franklin St., Richmond 20
Time and Place: First Tuesday of January, March, May and October; Commonwealth Club

TIDEWATER OPHTHALMOLOGICAL AND OTOLARYNGOLOGICAL SOCIETY
President: Dr. Beverley R. Kennon, III
Secretary: Dr. J. A. Klotz, Jr., Wainwright Bldg., Norfolk, Va.
Time: Three times yearly

Washington

WASHINGTON STATE MEDICAL ASSOCIATION, SECTION ON EYE, EAR, NOSE AND THROAT
President: Dr. George H. Drumheller
Secretary-Treasurer: Dr. Claude K. Miller, 601 Douglas St., Wenatchee
Time and Place: September 1957; Olympic Hotel, Seattle

PUGET SOUND ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY
President: Dr. Russell T. Horsfield
Secretary: Dr. Willard F. Goff, 1215 Fourth Ave., Seattle 1
Time and Place: Third Tuesday of February, March, April, May, October and November; usually in Seattle

SPOKANE ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY
President: Dr. C. A. Veasey, Jr.
Secretary: Dr. William C. Richter, Medical Center Bldg.
Time and Place: 8:00 p.m., fourth Tuesday, September to May; Blood Bank Bldg.

Washington, D. C.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA, SECTION ON OPHTHALMOLOGY

President: Dr. Robert E. du Prey
Secretary: Dr. Marshall M. Parks, 2129 Bancroft Pl. N.W., Washington 8
Time: February 12, April 9, 1957

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA, SECTION ON OTOLARYNGOLOGY

President: Dr. Russel S. Page, Jr.
Secretary: Dr. Edward M. O'Brien, 1835 Eye St. N.W.
Time and Place: Second Tuesday every other month, September through May; Army-Navy Club

West Virginia

WEST VIRGINIA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

President: Dr. William F. Beckner
Secretary: Dr. William K. Marple, 400 First National Bank Bldg., Huntington
Time and Place: August 1957; The Greenbrier, White Sulphur Springs; in conjunction with West Virginia Medical Association

Wisconsin

MADISON, WISCONSIN, EYE, EAR, NOSE AND THROAT SOCIETY

President: Dr. Peter A. Duehr
Secretary: Dr. Edward F. Purcell, 110 E. Main St.
Time and Place: 6:15 p.m., first Tuesday of each month; Madison Club

MILWAUKEE OTO-OPHTHALMIC SOCIETY

President: Dr. Howard V. Morter
Secretary: Dr. Lawrence L. Garner, 238 W. Wisconsin Ave.
Time and Place: 6:30 p.m., fourth Tuesday of each month; University Club of Milwaukee